SD-26030-01

SHEET INDEX (INITIATED ON ISSUE)

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FS [illegible] LINE IDENTIFICATION AND MARKER START CKT	B1B	33	33	33	36	36	36	36	40	40	40	40	40	40	40	40	40	40	40	40	40					
LINE LOAD CONTROL CKT FS 4 MARKER CONNECTOR CONTROL CKT FS 5 DIAL TONE [illegible] CKT	B2	32	32	32	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36					
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	D1B	33	33	33	36	36	36	39	40	40	40	40	44	45	46	47	47	47	47	47	47					
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CROSS CONNECTING INFORMATION	D2A*	33	33	33	33	33	33	33	33	33	33	33	44	44	44	47	48	48	50	50	50					
	D2B															47	48	48	50	50	50					
CROSS CONNECTING NO [illegible] 40 [illegible] EN	D3	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33					

* SHEETS WITH SUFFIX [illegible] ARE [illegible] THOSE [illegible] SHEET [illegible]

CONTENTS	SHEET NO	33	[illegible]	[illegible]	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
SC 1 DIAL TONE CONNECTION SC 2 CALL FORWARD	E1	[illegible]		[illegible]		33	33	3[illegible]	[illegible]	33	33	33	33	33	33	33	33	33	33	33	[illegible]					
SC 3 CALL BACK OR TERMINATING CALL SC 4 OVER ALL AND TRANSFER START LEAD TIMING SC 5 CALLS WAITING TIME OUT SC 6 TROUBLE RELEASE	E2	[illegible]	[illegible]	[illegible]	[illegible]	36	36	6	36	36	36	36	36	36	36	36	36	36	36	36	36					
CIRCUIT REQUIREMENT TABLE VAC RELAYS (B) THRU [illegible]	[illegible]		[illegible]	[illegible]	[illegible]	36	36	36	36	36	36	36	36	36	36	47	48	48	50	50	50					
CIRCUIT REQUIREMENT TABLE (TEST) MODE [illegible] END TIMING REQUIREMENT TABLE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30					
TABLE A	[illegible]	[illegible]	[illegible]	[illegible]	36	37	38	38	38	38	42	42	42	42	42	42	42	42	42	42	42					
CAD 1 3 4	[illegible]				[illegible]	35	35	35	40	41	42	42	44	44	44	44	44	49	49	51	52					
CAD 5	[illegible]										42	43	44	45	45	47	47	47	47	47	47					
CAD 6	[illegible]	29	29	35	35	35	35	35	40	40	40	40	40	40	40	40	40	40	40	40	40					
CAD 8	[illegible]	33	33	35	35	35	35	35	35	35	35	35	44	44	44	44	44	44	44	44	44					
CAD 9 10	[illegible]	32	32	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35					
CAD 1	G5A*	33	33	35	35	35	35	35	35	35	42	42	42	45	45	45	45	45	45	45	45					
CAD 1[illegible]	G5B	33	33	33	33	33	33	33	33	33	33	33	33	45	45	45	45	49	49	49	49					
CAD 1[illegible]	G6	33	33	35	35	35	35	35	35	35	42	42	42	42	42	47	42	42	42	42	42					
CAD 14	G7	33	33	35	35	35	35	35	35	35	42	42	42	42	42	42	42	42	42	42	42					
CAD 5	G8A*	32	32	35	35	35	35	35	40	40	42	42	42	42	42	42	42	42	42	42	42					
CAD 16	G8B								40	40	40	40	40	40	40	40	40	40	40	40	40					
	G9	12	12	12	12	12	12	12	40	41	41	41	41	41	41	41	41	41	41	41	41					
CAD 17	G10	30	30	30	30	30	30	30	40	41	41	41	41	41	41	41	41	41	41	41	41					
CAD 18 19 20	G11	29	29	35	35	35	35	35	35	35	42	42	42	42	42	42	42	42	42	42	42					
CAD 2[illegible] ,22	G12	29	29	29	29	29	29	29	29	29	29	29	29	45	45	45	45	45	45	45	45					
CAD 23	G13	33	33	35	35	35	35	35	35	35	42	42	42	42	42	42	48	48	48	48	48					
CAD 24 [illegible] 26 [illegible]	G14A*	33	34	35	36	36	36	36	40	40	40	40	44	45	46	46	46	49	49	49	49					
CAD 30	G14B	33	33	35	35	35	35	35	40	40	40	40	40	40	40	40	40	40	40	40	40					
CAD 3[illegible] 32 3[illegible]	G15	33	33	35	35	35	35	35	35	35	42	42	42	42	42	42	42	42	42	42	42					
CAD 34 3[illegible] 3[illegible]	G16	33	33	35	35	37	37	39	40	40	42	42	42	42	42	47	48	48	50	50	50					

DWG ISSUE	CD ISSUE	DATE ISSUED	DWN	APPD

DWG ISS	CD ISS	DWG ISS	CD ISS	DWG ISS	CD ISS
1	1	2D	2D	3D	3D
4A	3D APP 1A	5B	3D APP 2B	6B	3D APP 3B
7D	3D APP 4D	8D	3D APP 5D	9D	3D APP 6D
10D	3D APP 7D	11D	4D APP 1D	12D	4D APP 2D
13AC	4D APP 3AC	14D	5D	15D	5D APP 1D
16D	6D	17D	6D APP 1D	18A	6D APP 2A
18D	6D APP 3D	20D	7D	21D	7D APP 1D
22D	7D APP 2D	23D	7D APP 3D	24A	7D APP 4A
25D	7D APP 5D	26D	7D APP 6D	27AC	7D APP 7AC
28D	8D	29D	8D APP 1D	30D	8D APP 2D
31A	8D APP 3A	32D	8D APP 4D		

DWG ISS	CD ISSUE	DATE ISSUED	DWN	APPD
33D	8D APP 5D	1-12-71	JGS TMS DK GLM	DLK RCB EDM
34AR	8D APP 6AR	1-12-71	JGS TMS DK GLM	DLK RCB EMM
35D	8D APP 7D	12-1-71	GDA MSC	DLK RBC THJ
36D	8D APP 8D	5 1 74	CDI KMI	TB RBC THJ
37B	8D APP 9B	4 7-75	RFV NC	DLK ABVL THJ
38B	9B	9 14 76	CDI GS	EHH ABVL THJ
39B	9B APP 1B	3-15-77	CDI PEC	EHH ABVL RCA
40B	9B APP 2B	2 21-78	CDI CDI	EHH ABVL RCA
41AR	9B APP 3AR	7-12-78	CDI SGR	EHH ABVL RCA
42B	9B APP 4B	5-10-79	CDI SGR	EHH ABVL RCA
43A	9B APP 5A	5-10-79	CDI SGR	EHH ABVL RCA
44B	9B APP 6B	10-9-79	CDI SC	EHH BAT RW
45B	9B APP 7B	1-31-80	CDI TRG	EHH DAJ RW
46B	9B APP 8B	8 - 80	CDI JRB SGR	EHH DAJ RW
47A	9B APP 9A	10-24-80	CDI LG	EHH DAJ RW
48A	9B APP 10A	7-20-81	CDI JRB SGR	AM DAJ RW
49B	9B APP 11B	7-20-81	CDI JRB SGR	AM DAJ RW
50A	9B APP 12A	8/26/82	PRN OEM PVS	LHT DAJ WEJ
51B	9B APP 13B	4/30/84	DLS HSJ HSJ	AAA NAR DCJ
52B	9B APP 14B	4/18/85	EDR JMB JMB	CAA NAR GFR

SUPPORTING INFORMATION

CATEGORY	NO
EQUIPMENT DRAWING	~~J27451B-( )~~ ~~J27451E-( )~~ ~~J27451F-( )~~ J27451G-( ) J27451H-[illegible] J27451 -[illegible] [illegible] K ( ) J2745[illegible] [illegible] J2 4[illegible] [illegible]745[illegible] [illegible]51
EQUIPMENT REQUIREMENT CROSS CONN INDEX	[illegible]26[illegible]
WIRING & CABLING	[illegible]04 [illegible]
AMPLIS ASSEMBLY	[illegible]-948 3-30
MAINTENANCE BSP	18-01 -3[illegible] 18 [illegible] [illegible]8-11 [illegible]0 18- [illegible] - 03 [illegible]8 32 5[illegible]1 18-[illegible]3-501 [illegible]8-411-5[illegible]1 218 712-501

SHEET INDEX NOTES

1. WHEN CHANGES ARE MADE IN THIS DRAWING ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. THIS SHEET INDEX WILL BE REISSUED AND BROUGHT UP TO DATE EACH TIME ANY SHEET OF THE DRAWING IS REISSUED, OR A NEW SHEET IS ADDED.
3. THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE SHEET INDEX
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER
5. THE LAST ISSUE NUMBER OF THE SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE

AT&T TECHNOLOGIES, INC – PROPRIETARY

REPLACING SD-25548-01 FOR LINE & LINE LINK & SD-255[illegible]-01 FOR MARKER CONNECTOR CONTROL REPLACING SD-25574-01 FOR SERVICE OBSERVING CORD AND JACK CKT AND TEST LINE JACK CKT REPLACED BY SD-27943-01 EXCEPT FOR THE ADDITION OF A SINGLE FR IN OFFICES HAVING AN ODD NO OF FRAMES PER SD-26030-01

ISSUE 52B

2C02

A&M ONLY

CROSSBAR SYSTEMS

NO 5

LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT

(2) (LL)

SD-26030-01-A1

[illegible] SHEETS

AT&T BELL LABORATORIES 6S

SD-26030-01-A1

E 7969 (6-66)

APPARATUS INDEX

DESIG	LOCATION FS	APP FIG	EQPT
RELAYS			
A	3A1	M	
C	3E1	B	
CW1	3C1	B	
CW2	3C2	B	
RT	3A0	B	
HSGBO 0	18/H5	B	
HSGBO-9	18/H5	B	
IM	2G8	B	
LI(AUX)	10C8	19	
L	18/F4	1	
LC	18/B3	2	
LO-4	18/C8	21	
LO-4	18/C4	22	
LOC	18/E1	2-24	
LOL	18/F5	20	
LOL	18/F5	20	
LTA	9C6	18	
LTB1	9C7	18	
LTN2	9C5	18	
MYNT	8G1	17	
MK	2G8	B	
NET	18/H5	B	
REL	18/E1	20	
RI	3A6	B	
T1	2B5	B	
TAN	3A7	B	
TB	2G7	B	
TB1	1G8	B	
TBL	3B3	B	
TBT	3B2	B	
TST	11A5	B	
VFA,B,C	BM1	17	
VGDO-11	8B7	C	
VGDO-11	8B2	C	
VGDO-11	8B3	B	
VGSDO-11	18/B4	B	
X	2E5	B	
Z	2F5	B	

DESIG	LOCATION FS	APP FIG	EQPT
COMPONENT ASSEMBLY			
D1		18	
D2		18	
D3		18	
D4	SEE	15	
D5	APP	15	
	FIG		
N1		B	
N2		B	
CORDS			
1A	3B4	10	
2D	3B7	12	
DIODES			
D1	9D1	18	
D2,3	9F1	18	
D4	8A2	19	
TST	11A2	B	
VC-4	8H4	15	
VGCO-4	8E3	15	
VRIO-4	8F3	15	
VTO-4	8F3	14	
VUO-4	8D3	14	
JACKS			
JS-	18/F3	B	
LMB	3E5	B	
SLO-9	3B4	9	
SO(A)	3B7	11	
SO(B)	3B7	11	
TL(A)	3A9	13	
TL(B)	3A9	13	
LAMPS			
LMB	3E6	B	
NETWORKS			
RCO-9	18/H5	B	
METE-9	18/G4	B	
LR	9C2	18	

DESIG	LOCATION FS	APP FIG	EQPT
RESISTORS			
A	3F1	G	
C	3E1	B	
CW1	3C1	B	
CW2	3C1	B	
CW4	3C8	B	
D4	18/E6	B	
E	3A2	B	
F	3G2	B	
G	2E8	B	
H	2E5	B	
HO(1	18/G4	B	
HO(2	18/G4	B	
HO(4	18/G4	B	
HSBT	18/G4	B	
HSBB	18/G4	B	
K	2E1	B	
L	3L42-22		
LC	3L42-32	2	
LO-4	18/A3-C3	22	
LO-4	18/A3-C4	22	
LSO	18/F3	B	
LX	3H2	19	
M2	2H5	B	
RT4	18/C3	B	
ST4	18/E5	B	
VC-	8J4-C3	7,23	

DESIG	LOCATION FS	APP FIG	EQPT
SWITCHES, CROSSBAR			
COMS LINE & JUNCTOR			
L HOLD 0-9	18/D2		
L HOLD 0-9	18/D1		
LS SEL	18/E6		
LINE			
L HOLD 0-9	18/D2	N	
NT HOLD 0-9	18/D1	N	
LS-9 SEL	18/E6	N	
LINE			
L HOLD 00-19	18/D2		
LS-9 SEL	18/E6		
TUBES			
CW1	3C0	B	
TH	3E5	B	
TRT	8D1	B	

DRAWING INDEX	
50	4A
100	4A-1
150	4AA
200	4AB
	4AC
400	4AD
	4AE
800	4AF
	4AG
1000	4AH
	4AJ
1200	4AK
	4AL
1400	4AM
	4AN
1600	4AP
	4AQ
1800	4AR
	4AS
2000	4AT
3300	4AU

SD-26030-01-A2

LINE,LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT	SHEET 4EA SD-26030-01-A2
BELL TELEPHONE LABORATORIES, INC	ISSUE 1 65

LEAD INDEX CONNECTING CIRCUITS

CIRCUIT TITLE	CKT LEAD ANDLE LOC
2-WAY CENTRAL OFFICE TRK CKT	362
ALARM CKT	362
AUTO MON REG & SDR TES CKT	3E2
AUTO PROG TRK TEST CKT	302
AUX LINE LINK CKT	364
AUX LINE CKT FOR USE WITH NO 5 ETS	465
CALL WAITING CKT	3C6
CALL WAITING LINK CKT	304
CONCTRD TIE TRK OR ATTENDENT TRK	3E6
CONFERENCE CONT CKT	3E5
DISTRIBUTOR AND SCANNER APPLICATION FOR ETS (CFS) (TS)	367
ENHANCED OPERATIONAL TRUNK TEST AND REMOTE TRUNK MAKE BUSY CKT (TEST/ATMB)	302
LINE	3G4
LINE & SWITCH CKT	3G4
LINE CKT	364
LINE CKT- LINE LINK PULSING	362
LINE CONCENTRATOR CONT CKT	365
LINE - LINE LINK & CONN CKT	365
LINE - LINK CONN CKT	3G6
LINE LINK MARKER CONN CKT	367
LINE LOAD CONT CKT	3F7
LLP AND LLP-HIS LINE AMPLIFICATION SCHEMAT C	465
MARKER CONN CKT (CR TRAFFIC CONTROL)	369
MARKER CONN CKT (LINE LINK MARKER CONN)	389
MARKER CONN CKT (MISC BUSY)	3E9
MARKER CONN CKT (MARKER START & MAKE BUSY)	379
MARKER CONN CKT (MASTER TRAFFIC CONT)	369
MARKER CONN PROV CONT CKT	460
MASTER TEST CONTROL CKT	4C0
MASTER TEST FR, JK, LMP & KEY CKT	4F0
MASTER TRAFFIC CONT CKT	466
MINI REMOTE OFFICE TEST LINE INTERFACE CKT	3J7
NO TEST CONN CKT	481
NO OR TRK MAKE BUSY CKT	461
OBSERVING LINE CKT	4E1
OFFICE TEST TIE TRUNK CKT	4F1
OUTGOING SENDER L NK CKT	5J4
PATCHING JK CKT	483
POSITION A POSITION LOOP CKT	481
PROF CONT & MAKE BUSY CKT	4C3
RANGE EXTENSION CKT	403
REMOTE OFFICE TEST LINE CKT	4H0
REMOTE OFFICE TEST LINE ACCESS CKT	440
SDF TEST CKT	403
SDR MSG REG CKT	464
TEST CKT	484
TRAFFIC REG CKT	4C4
TRAFFIC USAGE RECM CKT	4C4
TRANSFER LINE (DENT & CONN CKT	4D4
TRK CKT	4F4
TRK LINK CKT	464
TRK LINK & CONN CKT	485
TRK TEST CKT	485
4-WIRE/2-WIRE CKT	405

DESIG | LOCATION FS | CAS

2-WAY CENTRAL OFFICE TRK CKT
B 1A/BD
T 1A/BD

ALARM CKT
MJ 3F4 | 383,E3

LINE CKT - LINE LINK PULSING
B1 965 | 1AA/D3
E 965 | 1AA/F5
FX 965 | 1AA/F2
LF 961
L4 908 | 1AA/D5
L5 908 | 1AA/E2
LTC 908 | 1AA/F5
M 965 | 1AA/F5
B 965 | 1AB/D
RO 965 | 1AB/F5
R1 965 | 1AB/F5
R2 965 | 1AB/F5
RTK 965 | 1AA/F5
S 965 | 1AA/D5
T 965 | 1AA/F5
T1 965 | 1AA/F5
T2 965 | 1AA/F5

ENHANCED OPERATIONAL TRUNK TEST AND REMOTE TRUNK MAKE BUSY CKT (TEST/ATMB)
ATT1 967 | 1AB/E2
A 1A/BD | 1B/D3
S 1A/BD | 1B/D3
AUTO PROG TRK TEST CKT
ATT1 967
ATT2 987
NTT 986
RO 986
R1 986
RTK 986
TO 986
T1 986

DESIG | LOCATION FS | CAS

SUB LINE LINK CKT
JA 1A/A6 | 1A5/H10
JB 1A/A6 | 1A5/H10
JT 1A/A6 | 1A5/J10
LA 1A/A6 | 1A5/J10
L5 1A/A6 | 1A5/J10
LT 1A/A6 | 1A5/J10
LMO-9 1A/F6 | 3E5
SMO-9 1B/F7 | 3F0
ELV 1B/D5 | 3G0
ELV1,2,4,5 1B/D5 | 3G0,J0
ELV1,3,5,7,9 1B/D5 | 3G0,J0

CALL WAITING CKT
H 1B/B0
S 1B/B0
T 1B/B0

CALL WAITING LINK CKT
H 1B/D4 | B0,N4
MCO-9 1B/N6 | 3J0
B 1A/B6 | 3F5,N5
S 1A/D0,D6 | 3F5,N5,J0
T 1B/D0 | 3F5,N5,J0
VOD-11 B3J | 1B/N0

OUTGOING SENDER LINK CKT
SLK 1SO-9 | 2A0
2A0

CONFERENCE CONTROL CKT
R 1B/B0
S 1A/D0
T 1A/B0

LINE
T 1B/B0 | 1B/B0, B5,J0
T 1B/B0 | 1B/B0, B5,J0, 1A/A

LINE & SWITCH CKT
R 1A/B0 | 1B7
T 1A/B0 | 1B7

LINE CKT
R 1B/B0
S 1B/B0
T 1B/B0

DESIG | LOCATION FS | CAS

LINE CONCENTRATOR (CM) CKT
C 1A/B0
L 1A/D0
T 1A/B0

LINE, LINE LINK & CONN CKT
0-4 7D3 | 1B/D3
85 1B/E7 | 1B/D0, 3A/CC
CO8 8C4 | 1B/D0
CS0-9 8C4 | 1B/D0
CS10-19 8C4 | 1B/B7
Co,20-29 8C4 | 1B/B7
9 8C4 | 1B/F7, 2A0/D8, CC8
DT 7D3
DTK 7F3 | 1B/F7
S 7F3 | 1B/F7
T 7F3
HOO-9 1B/H7 | 1B/D0
40K 1B/G7 | 1B/D0
40TO-4 7E5
LBO-9 1J/G4 | 1B/B3
LO- 7F8 | 1B/D7
LH0-9 1B/G2 | 1B/F7
LM0-9 1J/G3 | 1B/B5
LO 2G2 | 1B/F7
L08 2G2 | 1B/F7
L0E 2H2 | 1B/F7
L0L 1J/G5 | 1A8/B3, 1A8/E1
LOLL 1B/F7 | 1A8/B3, 1A8/E1, 1A8/
RB 3G4 | 3E3
NLL 1B/F7 | 1A0/B1, 1A0/
NT 1B/G5 | 1B/D0, 1B/D3, 1A/A
PL 1B/G5 | 1B/F7
SMO-9 1A/G8
ST3 7C8
ST4I 7C8
ST8 7D8
STB1 7C8

DESIG | LOCATION FS | CAS

LINE, LINE LINK & CONN CKT
VO-4 7G8,8F4 | 1B/F7, 3A0,H0, 4A0,B0, 4A0,J0
VO6-11 7E8 | 4A/B0
VF70-4 1B/F7 | 1B/F7, 4A0, 1J/F0
VO1- 7F8 | 4A/B0
VO2- 7G4 | 1B/F7, 4A0
VOR- 1C9,8B4 | 1B/F7, 3J0, 4A0, 1J/F0
VO3- 7F8 | 3J0
VO7- 7G4 | 1B/F7, 4A0

LINE LOAD CONT CKT
B3- 1B/E3 | 1B/D0
BT
CO8 8C4 | 1B/D0
CS0-9 8C4 | 1B/D0
CS10-19 8C4 | 1B/B7
Co,20-29 8C4 | 1B/B7
D 1B/F7
DT 7D3
DTK 7F3 | 1B/F3, 3J0
S 7F3 | 1B/F3
T 7F3
HOO-9 1B/H7 | 1B/D0
40K 1B/G7 | 1B/D0
40TO-4 7E5
LBO-9 1J/G4 | 1B/B3
LO- 7F8 | 1B/D7
LH0-9 1B/G2 | 1B/F7
LM0-9 1J/G3 | 1B/B5
LO 2G2 | 1B/F7
L08 2G2 | 1B/F7
L0E 2H2 | 1B/F7
L0L 1J/G5 | 1A8/B3, 1A8/E1
LOLL 1B/F7 | 1A8/B3, 1A8/E1, 1A8/
RB 3G4 | 3E3
NLL 1B/F7 | 1A0/B1, 1A0/
NT 1B/G5 | 1B/D0, 1B/D3, 1A/A
PL 1B/G5 | 1B/F7
SMO-9 1A/G8
ST3 7C8
ST4I 7C8
ST8 7D8
STB1 7C8

DESIG | LOCATION FS | CAS

LINE, LINE LINK & CONN CKT
1A4 2D3 | 2D4
HOTS-9 1B/F7 | 2D7
TK 2C6 | 2D4
TK1 2C6 | 2D4
TK2 2C6 | 2D4
TPL 2C6 | 2D4
TPC 2C6 | 2D4

LINE LOAD CONT CKT
A8 2B0 | 3H3
AC 2D0 | 3H3

LINE LINK CONT CKT
B3- 1B/E3 | 1B/D0
BT
CO8 8C4 | 1B/D0
CS0-9 8C4 | 1B/D0
CS10-19 8C4 | 1B/B7
Co,20-29 8C4 | 1B/B7
D 1B/F7
DT 7D3
DTK 7F3 | 1B/F3, 3J0
S 7F3 | 1B/F3
T 7F3
HOO-9 1B/H7 | 1B/D0
40K 1B/G7 | 1B/D0
40TO-4 7E5
LBO-9 1J/G4 | 1B/B3
LO- 7F8 | 1B/D7
LH0-9 1B/G2 | 1B/F7
LM0-9 1J/G3 | 1B/B5
LO 2G2 | 1B/F7
L08 2G2 | 1B/F7
L0E 2H2 | 1B/F7
L0L 1J/G5 | 1A8/B3, 1A8/E1
LOLL 1B/F7 | 1A8/B3, 1A8/E1, 1A8/
RB 3G4 | 3E3
NLL 1B/F7 | 1A0/B1, 1A0/
NT 1B/G5 | 1B/D0, 1B/D3, 1A/A
PL 1B/G5 | 1B/F7
SMO-9 1A/G8
ST3 7C8
ST4I 7C8
ST8 7D8
STB1 7C8

DESIG | LOCATION FS | CAS

LINE, LINE LINK & CONN CKT
1A4 2D3 | 2D4
HOTS-9 1B/F7 | 2D7
TK 2C6 | 2D4
TK1 2C6 | 2D4
TK2 2C6 | 2D4
TPL 2C6 | 2D4
TPC 2C6 | 2D4

LINE LOAD CONT CKT
A8 2B0 | 3H3
AC 2D0 | 3H3

DISTRIBUTOR (DT SCANNER APPLICATION FOR ETS (CFS) (TS)
S 1A/D0
T 1A/B0

MINI REMOTE OFFICE TEST LINE INTERFACE CKT
CCC 8E0 | 1C/AC
CCR 8E0 | 1C/AC
CRU 8E0 | 1A8F,9M
CS0-9 8E0 | 1A8J/E3
CS10-19 8E0 | 1A8J/E2
CS20-29 8E0 | 1A8J/E1
CSR 8E0 | 1A8J/E4
CSU 8E0 | 1A8J/E2
HMR 8E0 | 1A/A6
P 1B/B0
S 1B/B0
T 1B/B0

DESIG | LOCATION FS | CAS

MARKER CONN CKT (CR TRAFFIC CONT)
F5 2E0
F10 2E0
TC 2A0
TR1 2B0

MARKER CONN CKT (LINE LINK MARKER CONN)
BTK 2E
VST2-9 1B/B7
RK 2C4
MS1 1B/B7
VS2 B/C7
TC 2A0
TR1 2B0
TK 2C4
TPL 2C4
TPC 2B4

VIA0-1 1B/B7
VST0- 1 1B/B7

MARKER CONN CKT (MISC BUSY)
LC8 2J5

MARKER CONN CKT (MARKER START & MAKE BUSY)
MS- 1B/F7

MARKER CONN CKT (MASTER TRAFFIC CONT)
CMA 2E8
CMK 2F8
M 2G8
TCC 2B8
TCR 2C8

LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT (2) SD-26030-01-A3

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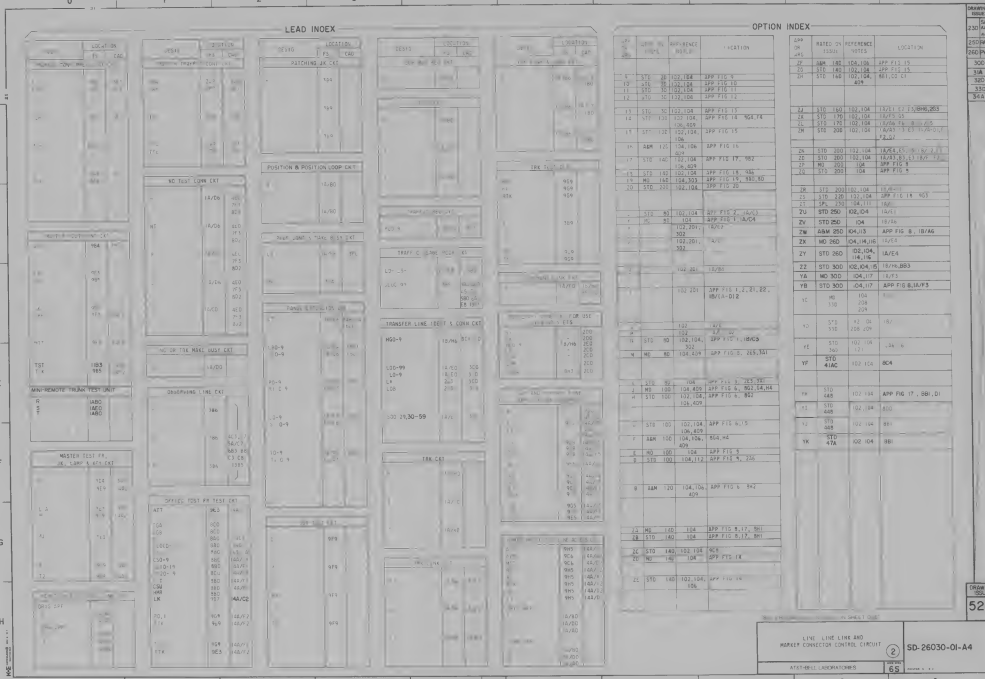
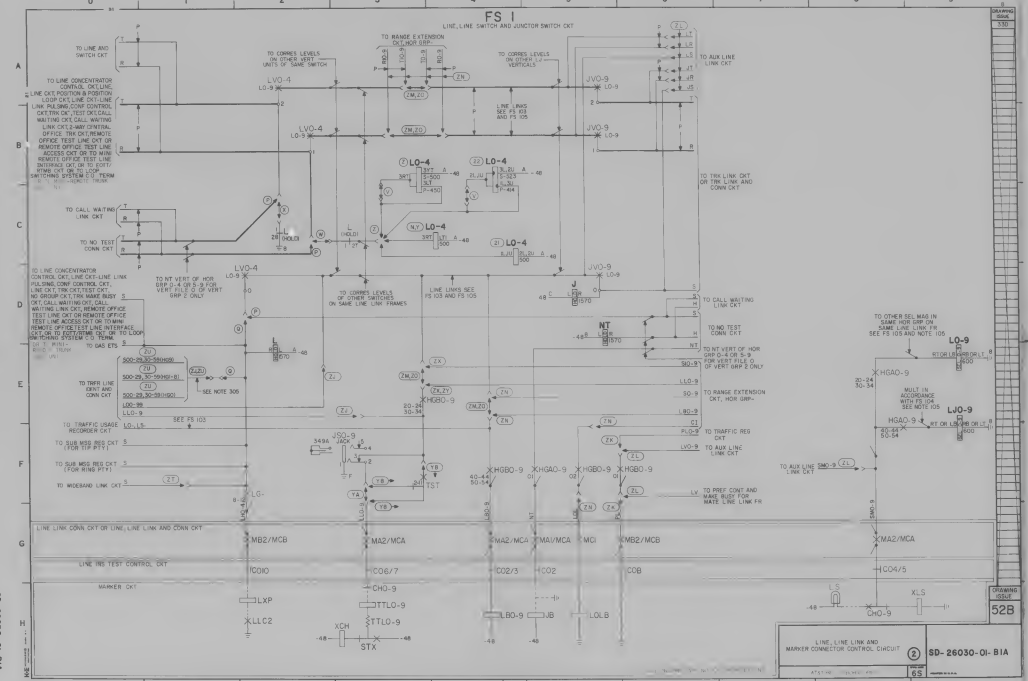
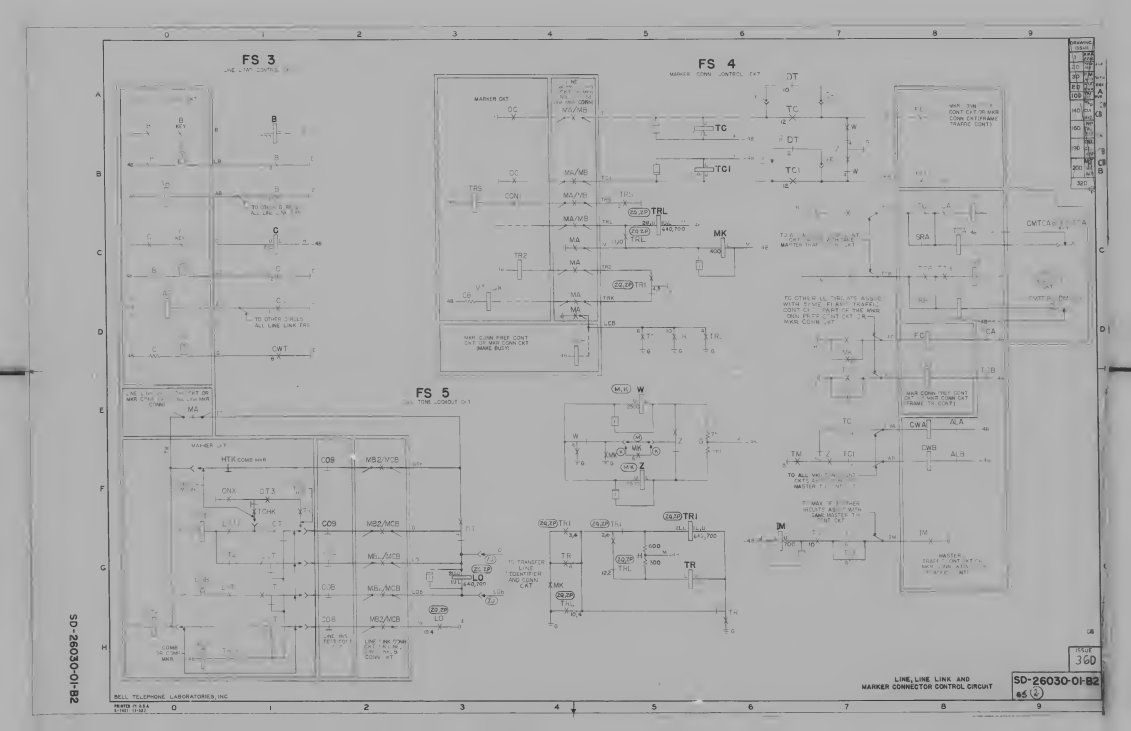
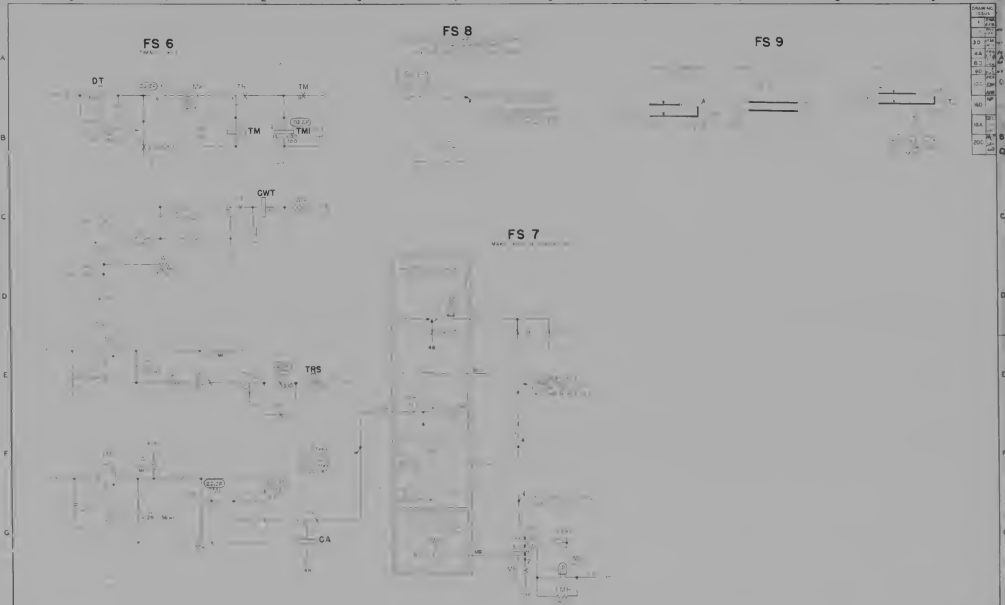
DRAWING ISSUE 49B

SD-26030-01-A3


LEAD INDEX
OPTION INDEX
SD-26030-01-A4
LINE LINK-LINE AND MARKER CONNECTOR CONTROL CIRCUIT
AT&T-BELL LABORATORIES
52B


FS I
LINE, LINE SWITCH AND JUNCTOR SWITCH CKT
TO LINE AND SWITCH CKT
TO LINE CONCENTRATOR CONTROL CKT, LINE CKT POSITION & POSITION LOOP CKT, LINE CKT-LINE LINK PULSING, CONF CONTROL CKT, TRK CKT, TEST CKT CALL WAITING CKT, CALL WAITING LINK CKT, 2-WAY CENTRAL OFFICE TRK CKT, REMOTE OFFICE TEST LINE CKT OR REMOTE OFFICE TEST LINE ACCESS CKT, OR TO MINI REMOTE OFFICE TEST LINE INTERFACE CKT OR TO ESS/TSPS SWITCHING SYSTEM CCT TERM
TO RANGE EXTENSION CKT, HOR GRP
TO CORRES LEVELS ON OTHER VERT UNITS OF SAME SWITCH
TO CORRES LEVELS ON OTHER VERTICALS
TO AUX LINE LINK CKT
LINE LINKS SEE FS 103 AND FS 105
TO TRK LINK CKT OR TRK LINK AND CONN CKT
TO CALL WAITING LINK CKT
TO NO TEST CONN CKT
TO NT VERT OF HOR GRP D-H OR S-9, SEE FS 105 AND NOTE 105, OR VERT GRP E ONLY
TO RANGE EXTENSION CKT, HOR GRP
TO TRAFFIC REG CKT
TO AUX LINE LINK CKT
TO PREF CONT AND MAKE BUSY FOR MATE LINE LINK FR
TO OTHER SEL MAG IN SAME HOR GRP ON SAME LINE LINK FR SEE FS 105 AND NOTE 105
MULT IN ACCORDANCE WITH FS 104 SEE NOTE 105
TO LINE CONCENTRATOR CONTROL CKT, LINE CKT-LINE LINK PULSING, CONF CONTROL CKT, LINE CKT, TRK CKT, TEST CKT, NO GROUP CKT, TRK MAKE BUSY CKT, CALL WAITING CKT, CALL WAITING LINK CKT, REMOTE OFFICE TEST LINE CKT OR REMOTE OFFICE TEST LINE ACCESS CKT OR TO MINI REMOTE OFFICE TEST LINE INTERFACE CKT OR TO ESS/TSPS SWITCHING SYSTEM CCT TERM
TO NT VERT OF HOR GRP D-H OR S-9, SEE FS 105 AND NOTE 105, OR VERT GRP E ONLY
TO CORRES LEVELS ON OTHER VERTICALS ON SAME LINE LINK FRAMES
LINE LINKS SEE FS 103 AND FS 105
TO SAS ETS
TO TRFR LINE CKT AND CONN CKT
SEE NOTE 305
SEE FS 103
TO TRAFFIC USAGE RECORDER CKT
TO SUB MSG REQ CKT (FOR TIP PTY)
TO SUB MSG REQ CKT (FOR RING PTY)
TO WIDEBAND LINK CKT
LINE LINK CONN CKT OR LINE, LINE LINK AND CONN CKT
LINE LINK TEST CONTROL CKT
MARKER CKT
MB2/MCB
MA2/MCA
MA2/MCA
MA1/MCA
MCI
MB2/MCB
MA2/MCA
C010
C06/7
C02/3
C02
C08
C04/5
LXP
CHO-9
XLS
LLC2
TTLO-9
LBO-9
JJB
L0LB
XCH
STX
LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT
SD- 26030-01- BIA
DRAWING ISSUE
52B
SD-26030-01-BIA


FS 3
LINE LINK CONTROL
FS 4
MARKER CONN CONTROL CKT
FS 5
TIME-OUT CKT
MARKER CKT
MARKER CONN CONTROL CKT
LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT
SD-26030-01-B2
ISSUE 360
BELL TELEPHONE LABORATORIES, INC



LINE, LINE LINK AND
MARKER CONNECTOR CONTROL CIRCUIT

SD-26030-01-B3
65 (1)

BELL TELEPHONE LABORATORIES, INC

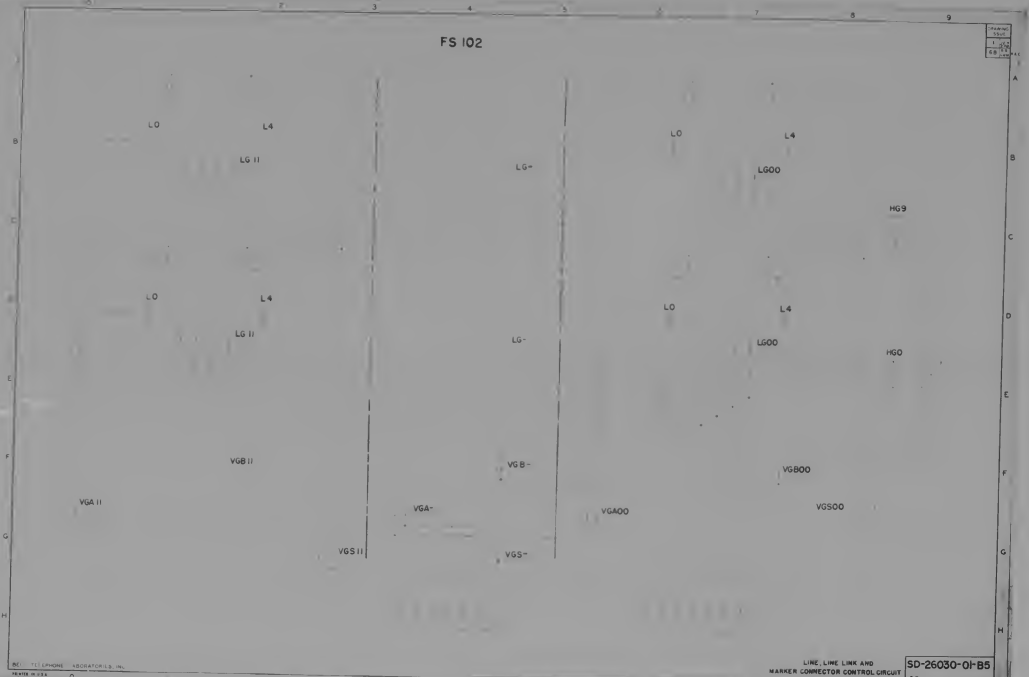
SD-26030-01-B3

FS 101

FRAME ARRANGEMENT

LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT	29 SD-26030-01-84
BELL TELEPHONE LABORATORIES, INC	8 65

SD-26030-01-84



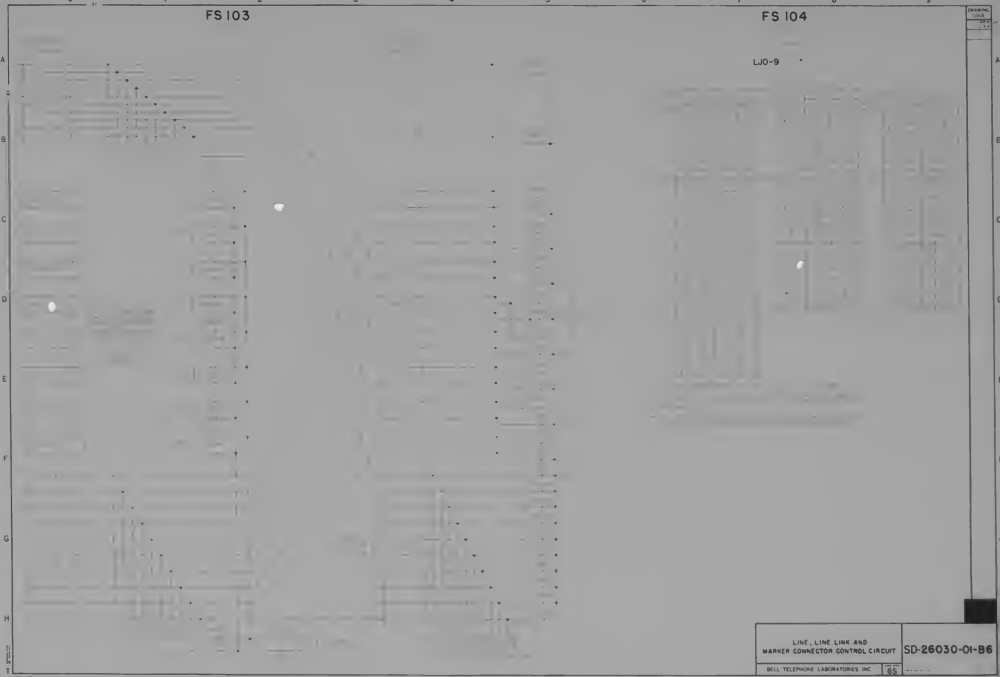
LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT

SD-26030-01-B5

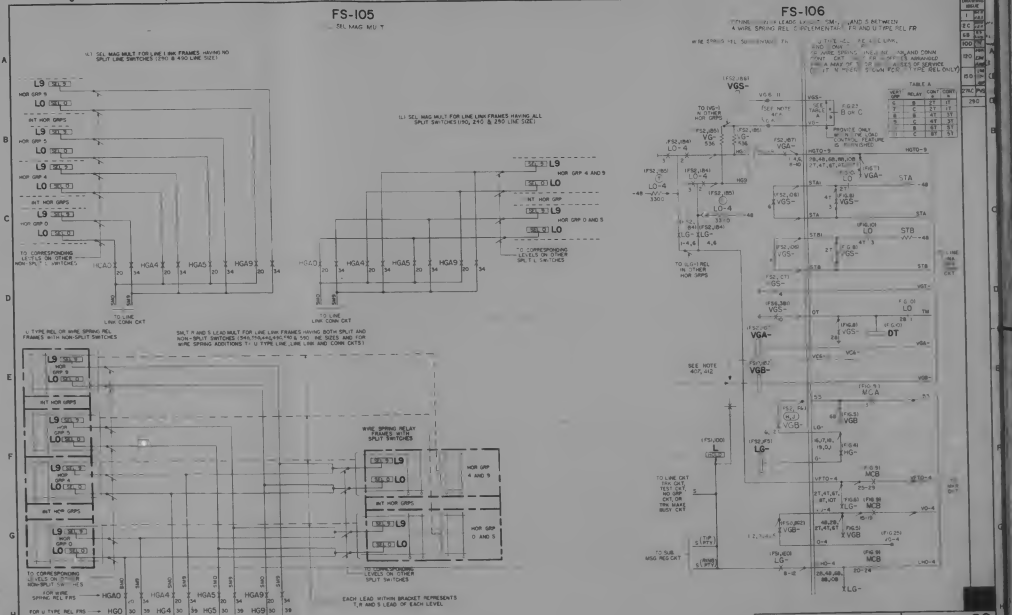
65

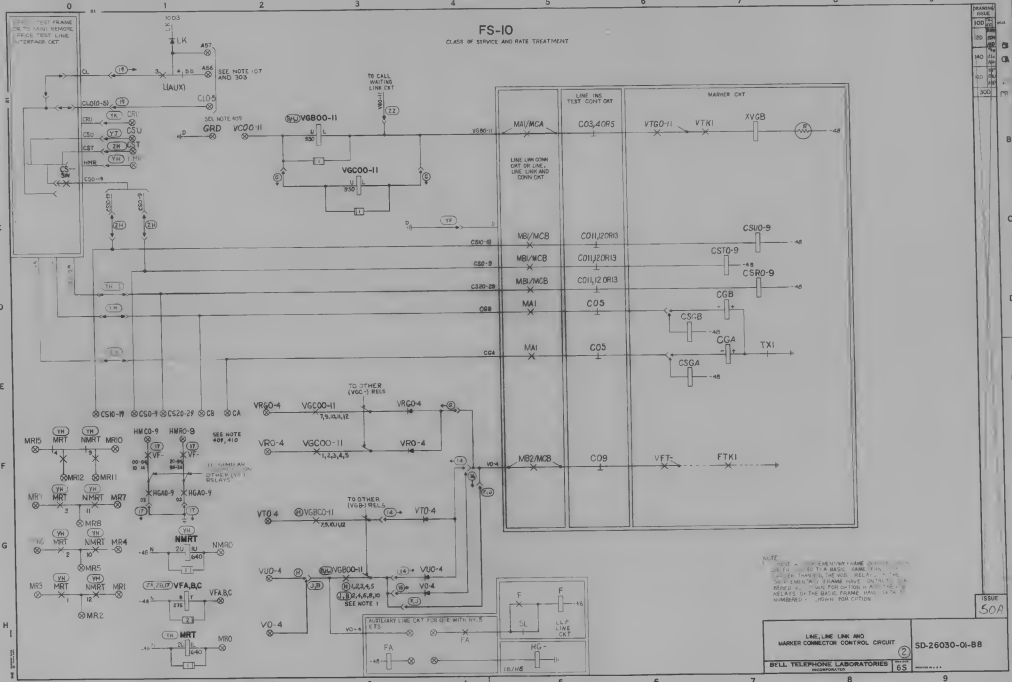
SD-26030-01-B5

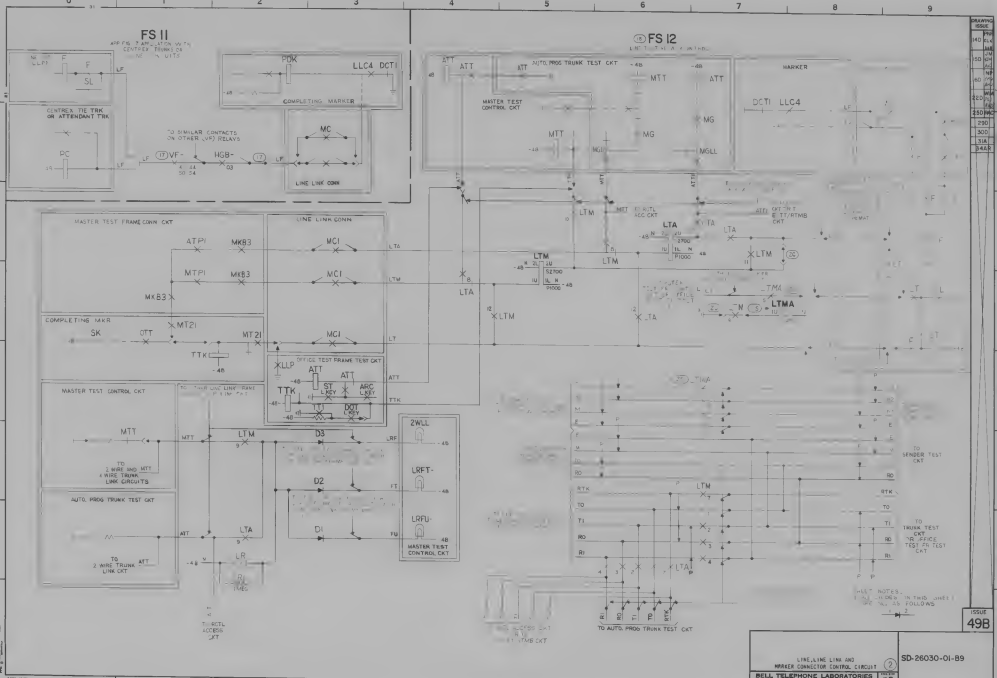
FS 102
LO
L4
LG II
LG-
LGOO
HG9
LO
L4
LG II
LG-
LGOO
HGO
VGB II
VGB-
VGBOO
VGA II
VGA-
VGAOO
VGSOO
VGS II
VGS-
LINE, LINE LINK AND
MARKER CONNECTOR CONTROL CIRCUIT
SD-26030-01-85
65
SD-26030-01-85

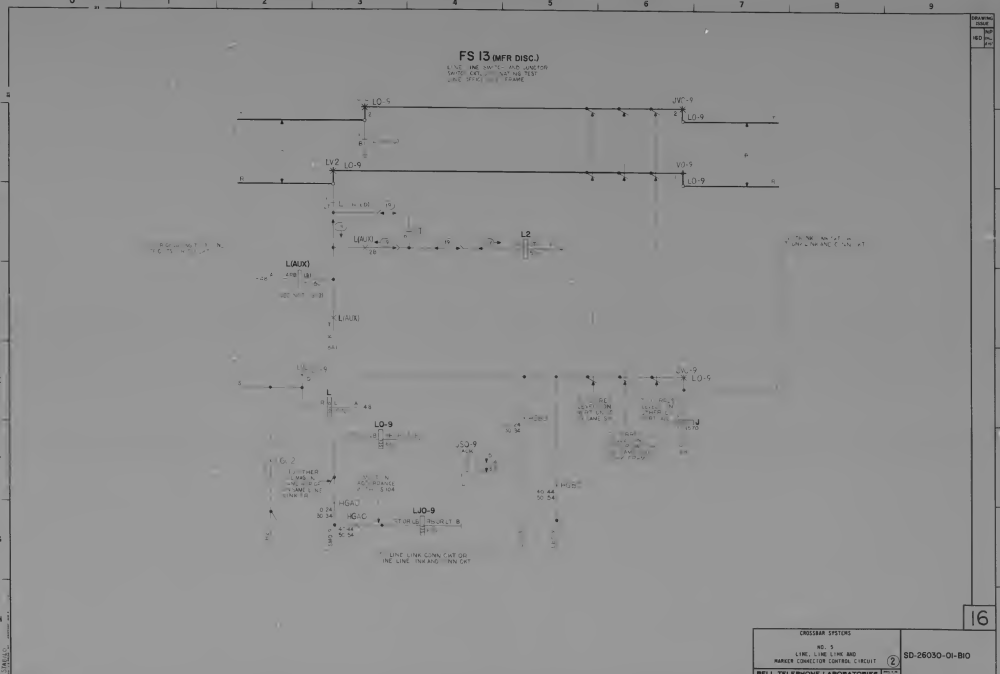


SD-26030-01-B6

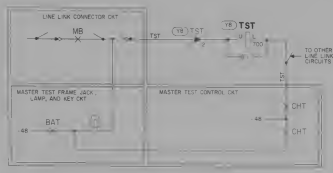

FS-105
TEL MAG MULT
FS-106
TO LINE LINK CONN CKT
TO CORRESPONDING LEVELS ON OTHER SPLIT L SWITCHES
HOR GRP 4 AND 9
HOR GRP 0 AND 5
INT HOR GRPS
HGA0
HGA4
HGA5
HGA9
HG0
HG4
HG5
HG9
VGS-
VGA-
VGB-
STA
STB
DT
MCA
MCB
TLG-
LO-
HG-
VG-
SEE NOTE 407,412
EACH LEAD WITHIN BRACKET REPRESENTS T, R AND S LEAD OF EACH LEVEL
LINE, LINK LINK AND MARKER CONNECTOR CONTROL CIRCUIT
BELL TELEPHONE LABORATORIES, INC
SD-26030-01-B7
29
SD-26030-01-B7


FS-10
CLASS OF SERVICE AND RATE TREATMENT
TO CALL WAITING LINE CKT
LINE LINK CONN CKT LINE TRUNK CONN CKT
LINE INS TEST CONT CKT
MARKER CKT
MAI/MCA
MBI/MCB
MAI
MB2/MCB
VGB00-11
VGC00-11
VGD00-11
VGBC0-11
VGA00-11
VGB00-11
C03,4,0R5
C011,20R13
C05
C09
VTG0-11
VTK1
XVSB
CSU0-9
CST0-9
CSR0-9
CGB
CGA
CSGB
CSGA
TXI
VFT-
FTK1
SEE NOTE 107 AND 303
SEE NOTE 409,410
TO OTHER (VGC) RELS
TO OTHER (VGB) RELS
AUXILIARY LINE CKT FOR QTE WITH SV-5 LEFT
LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT
SD-26030-01-88
BELL TELEPHONE LABORATORIES
INCORPORATED
65
ISSUE 5OA


FS II
FS I2
MASTER TEST FRAME CONN CKT
LINE LINK CONN
COMPLETING MKR
MASTER TEST CONTROL CKT
AUTO PROG TRUNK TEST CKT
MARKER
LINE LINK CONN
MASTER TEST CONTROL CKT
LTA
LTM
LTMA
SD-26030-01-89
ISSUE 49B
BELL TELEPHONE LABORATORIES


FS 13 (MFR DISC.)
LO-9
JVC-9
LV2
VO-9
L(AUX)
L2
SW-9
LJO-9
HGAC
CROSSBAR SYSTEMS
NO. 5
LINE, LINE LINK AND
MARKER CONNECTOR CONTROL CIRCUIT
2
SD-26030-01-BIO
BELL TELEPHONE LABORATORIES
INCORPORATED
65
16

FS 14
TEST RELAYS



DRAWING SIZE 300

30

LINE, LINE LINK AND MARKER CONNECTOR CONTROL CKT (2) SD-26030-01-BII

BELL TELEPHONE LABORATORIES INCORPORATED SHEET 65

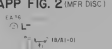
SD-26030-01-BII

APP FIG. 1 (MFR DISC)

RESISTOR

DESIG	LOC	CODE
T L-	IB/82-02	KS 13491,L3,3300

APP FIG. 2 (MFR DISC)



RESISTOR

DESIG	LOC	CODE
(1) L-	IB/82-02	KS-13491,L3,3300

APP FIG. 3

325AR CROSSBAR SWITCH

DESIG	L-OG-9	
LEVEL	WIRE	LOC
0-8	0	IB/05
0-9	1	IB/05
0-0	2	IB/05
0-1	3	IB/05
MAGNETS	L HOLD/0-9	IB/02
	2Y HOLD/0-9	IB/05
	1/2 SEC	IB/09
HOLD 0 N CONT	1T- 22 1B- 08	IB/03 IB/02

APP FIG. 4

325AP CROSSBAR SWITCH

DESIG	L-	
LEVEL	WIRE	LOC
0-8	0	IB/22
0-9	1	IB/22
0-0	2	IB/22
0-1	3	IB/22
MAGNETS	L HOLD 0-9	IB/22
	2Y HOLD 0-9	IB/25
	1/2 SEC	IB/09
HOLD 0 N CONT	1T- 27 1B- 28	IB/23 IB/24

APP FIG. 5

325AP CROSSBAR SWITCH

DESIG	L-	
LEVEL	WIRE	LOC
0-8	0	IB/82
0-9	1	IB/82
0-0	2	IB/82
MAGNETS	HOLDOG IB	IB/82
	1/2-9 SEC	IB/09
HOLD 0 N CONT	1T- 23 1B- 22	IB/83 IB/82

APP FIG. 6

DESIG	VGA-		VGB-		VGB-		VGC-		VGD-						DESIG
CODE	AF3		AF2B		AF16S		AF16S		AF16S						CODE
OPTION			1μF		H		L								OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12	H	IB/83	H	IB/81	H	BF2	H	BE2							12
11	H	IB/85			H	BF2	H	BF2							11
10	H	IB/85	H	BF2	H	BF2	H	BE2	H	381					10
9	H	IB/85			H	BF2	H	BE2							9
8	H	IB/85	H	BF2	BH		BH		H	IB/C1					8
7					H	BF2	H	BE2							7
6	H	IB/85	H	BF2	BH		BH		H	IB/C1					6
5					H	BG2	H	BF2							5
4	H	IB/85	H	BF2	H	BG2	H	BF2	H	IB/81					4
3	H	IB/85	H	BF2	H	BG2	H	BF2							3
2	H	IB/85	H	BF2	H	BG2	H	BF2							2
1	H	IB/85			H	BG2	H	BF2							1
COIL	H	IB/87		BB2	H	BB2	H	BB2		IB/84					COIL

RETIMERS

DESIG	LOC	CODE
(3A,2) VGB-	8B2	185A
(5) VGC-	BC5	185A

APP FIG. 7 (MFR DISC)

DESIG	LG-									
CODE	AF3									
OPTION										
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12	H	IB/C1								
11	H	IB/C1								
10	H	IB/C1								
9	H	IB/C1								
8	H	IB/C1								
7										
6	H	IB/C1								
5										
4	H	IB/C1								
3	H	IB/C1								
2	H	IB/C1								
1	H	IB/C1								
COIL	H	IB/81								

RESISTOR

DESIG	LOC	CODE
VG-	IB/83-03	KS-8942,L4A,536

LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT

SD-26030-01-01

6S (2)

ISSUE 36D

BELL TELEPHONE LABORATORIES, INC.

PRINTED IN U.S.A.

SD-26030-01-01

APP FIG. 8

RELAY

DESIG			B		C		CA		CWT				OT		DT		IM		TM1		LO		LO		DESIG
CODE			AF54		AF54		AF63		AJ7				AF512		AF32		AF56		AK500				AF114		CODE
OPTION													E		O				ZQ				ZP		OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12			M	2B1	M	2D1									EMB						B	1B/D5			12
11																					BM				11
10			BM	1B/A3	BM	1B/C3									EBM	2A7					M	2H3	M		10
9							B														B	3A1			9
8			BM	1B/A3	BM	1B/C3	M	3D5					EBM	3C2	EBM	3C2					B	1B/C5	BM	1B/C5	8
7			B	1B/A3	B	1B/C3	B																		7
6			BM	1B/A3	BM	1B/C3	EMB	3G2	M	2D1			EMB		EMB		EBM	3E1					BM	1B/D5	6
5			B	1B/A3	B	1B/C3	B												B						5
4			BM	1B/A3	BM	1B/C3	M	3F5					EBM	2G3	EBM	2G3			BM	3F2			M	2H3	4
3																			M	3E2					3
2			M	2B1	M	2C1									EBM	2B7			BM	3F1			B	3A1	2
1																			M						1
COIL				2A1		2C1		3G2		3C2				3A0		3A0		2G6		3B2		2G3		2G3	COIL

RELAY

DESIG	MK				TC		TC1		TM		TM1		TR		TR1		TRL		TRS		TR1		TRL		DESIG
CODE	AF49				AF52		AF52		AF524		AF5D		AF32		AF50		AF114		AF32		AK34				CODE
OPTION											ZP				ZP		ZP				ZQ		ZQ		OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12	EM	3E2			M	2A7	M	2B7	M	2F7			EMB	2H6					EMB	3E2			B	2G5	12
11	M	2G4																					BM	2C5	11
10	EBM	2D7			BM	1B/C6	BM	1B/D6	M	2G7	M	3E2	EBM	2D5	M		M	2C5	EBM	1B/D6			M	2G4	10
9																							B	1B/C7	9
8	EBM	3D5			BM	2B7	BM	2C7	EBM	3A3	BM	3F2	EBM	1B/C7	BM	2D5	BM	1B/C7	EBM	1B/C6			B	1B/D7	8
7	B	3A1																							7
6	EMB	a			BM	2G7	BM	2G7	EBM	2D5	BM	3F1	EMB	2G4	BM	2G5	BM	1B/D7	EMB	3A2					6
5																					B				5
4	EBM	3G1			BM	2E7	BM	2F7	M	2C7	M		EBM		M	2G4	M	2G4	EBM	2D6	BM	2D5			4
3																					M	2G4			3
2	M	2E7			M		M		M	2C7			EBM	1B/D7			B	2G5	EBM	2B5	BM	2G5			2
1	M	2E4			M	2D7	M	2E7													M				1
COIL		2C6				2A6		2B6		3B2		3B2		2G5		2F5		2C5		3E2		2F5		2C5	COIL

a (M) 3A1
(K) 2F5

RELAY

DESIG	W		W		Z		Z		TST				DESIG
CODE	AF67		AF146		AF30		AF147		AJ12				CODE
OPTION	M		K		M		K		YB				OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12					EBM		EBM		EBM				12
11									EBM	1A/F3			11
10					EBM	1B/D6	EBM	1B/D6	EBM	1A/F3			10
9									EBM	1A/F3			9
8	EBM	2A7	EBM	2A7	EBM	1B/C6	EBM	1B/C6	EBM	1A/F3			8
7									EBM	1A/F3			7
6	EMB	2E4	EMB	2E4	EBM		EBM	2F7	EBM	1A/F3			6
5									EBM	1A/F3			5
4	EBM	2B7	EBM	2B7	EBM	2B7	EBM	2B7	EBM	1A/F3			4
3									EBM	1A/F3			3
2					EBM	2E5	EBM	2E5	EB'	1A/F3			2
1									EBM				1
COIL		2E5		2E5		2F5		2F5		11A3			COIL

RELAY

DESIG	HG40-9	HG8D-9	
CODE	286B	286B	286H
OPTION		ZA	ZB
54	1A/F8	1A/F4	
53	1A/F8	1A/F4	
52	1A/F8	1A/F4	
51	1A/F8	1A/F4	
50	1A/F8	1A/F4	
44	1A/F8	1A/F4	
43	1A/F8	1A/F4	
A2	1A/F8	1A/F4	
41	1A/F8	1A/F4	
40	1A/F8	1A/F4	
34	1A/E8	1A/E4	
33	1A/E8	1A/E4	
32	1A/E8	1A/E4	
31	1A/E8	1A/E4	
30	1A/E8	1A/E4	
2A	1A/E8	1A/E4	
23	1A/E8	1A/E4	
22	1A/E8	1A/E4	
21	1A/E8	1A/E4	
20	1A/E8	1A/E4	
14	1A/F1	1A/F1	
13	1A/F1	1A/F1	
12	1A/F1	1A/F1	
11	1A/F1	1A/F1	
10	1A/F1	1A/F1	
04	1A/F1	1A/F1	
03	8F1	9B2	
02	BFO,F1	1A/F5	
01	1A/F5	1A/F6	
00	1B/G6	1B/G6	
COIL	1B/H5	1B/H5	

TUBE

DESIG	LOC	CODE
CWT	3C0	313CC
TM	3F0	346B OR 346C
TRS	3E0	346B OR 346C

CAPACITOR

DESIG	LOC	CODE
A	3G1	4370A
C	3E1	439QA
CW1	3C1	4370A
CW2	3D0	KS-13368,L3,.001UF
D	3E0	KS-13368,L3,.001UF
J	3G0	KS-13368,L3,.001UF
LG	1B/E6	441K

DIODE

	DESIG	LOC	CODE
(YB)	TST	11A2	~~446K~~ 533K

JACK

[10] JSO-9
239A OR 239AM
1A/F3

JACK

LMB
280C OR 280CM
3G5

LAMP

DESIG	LOC	CODE
LMB	3G5	2Y

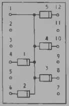
NETWORK

	DESIG	LOC	CODE
	CWT	3C2	185A
	DT	3A0	185A
	HG0-9	1B/H5	180A
(ZW)	HGT0-9	1B/A6	185A
	IM	2G7	185A
	LO	2G3	185A
	MK	2C6	185A
	TC	2A5	185A
	TC1	2B5	185A
	TM	3B1	186A
	TM1	3B3	186A
(YB)	TST	11A3	185A
	W	2E5	185A
	Z	2F5	185A

RESISTOR

DESIG	LOC	CODE
A	3F1	~~145C~~, 263A,3.01MEG
C	3F1	KS-13490,L1.270
CW1	3C1	~~145A~~,KS-20810,L1A 1 96 MEG
CW2	3C1	KS-13490,L3,1000
CW3	3C1	KS-13490,L3,0.1MEG
CW4	3C3	KS-13492,L2,1500
DR	1B/E6	KS-13490,L3,0.1MEG
E	3E2	~~145C~~,KS-20810,L1A 0.75MEG
F	3G0	18BM
G	2E6	19BW
H	2G5	19GN
HG01	1B/G6	19LA
HG23	1B/G6	19LA
HG45	1B/G6	19LA
HG67	1B/G6	19LA
HG89	1B/G6	19LA
K	3E1	18BH
LG	1B/E6	KS-13490,L3,510
LMB	3H5	18CN
MB	3H5	18AG
STA	1B/C5	18AG
STB	1B/D5	18AG

COMPONENT ASSEMBLY



DESIG			N1		N2	
CODE			[2] ED-94823-( )G38			
OPTION			ZV			
COMPONENT	CODE	POS	DESIG	LOC	DESIG	LOC
NETWORK	185A	1	HGT0	1B/A6	HGT5	1B/A6
		2	HGT1	1B/A6	HGT6	1B/A6
		3	HGT2	1B/A6	HGT7	1B/A6
		4	HGT3	1B/A6	HGT8	1B/A6
		5	HGT4	1B/A6	HGT9	1B/A6

DRAWING ISSUE	
10D	[illegible] WEC
12D	PRA EDM AHD
14D	EJB CLK AHD
17D	EN [illegible]
20D	MT SAV [illegible]
25D	RAC
30D	
33D	

ISSUE 45B

LINE, LINE LINK AND
MARKER CONNECTOR CONTROL CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

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(2)

SD-26030-01-C2

APP FIG. 9

JACK

DESIG	LOC	CODE
[10] SLS-9	3AA	KS-14603A-L2 OR KS-20687,L3

APP FIG. 10

CORD

DESIG	LOC	CODE
SL	3B4	IW17A

APP FIG. 11

JACK

DESIG	LOC	CODE
[2] SG(A,B)	3B7	223A

APP FIG. 12

CORD

DESIG	LOC	CODE
SO	3B7	3P54A

APP FIG. 13

JACK

DESIG	LOC	CODE
[2] TL(A,B)	3B9	223A

APP FIG. 14

DIODE

DESIG	LOC	CODE
2D [5] VTD-4	8F3	*926E, B13C
[5] VID-4	8E3	*926E, B13C

[2] D- AMPLAS UNIT, ED-44823-( ), GROUP 2

DIODE DESIG	LOC	CODE	AMPLAS
2D [5]VTD-4	8F3	*926E, B13C	D3
[5]VID-4	8E3	*926E, B13C	D2

APP FIG. 15

DIODE

DESIG	LOC	CODE
2F [5] VRD-4	8F3	*926E, B13C
[5] VRD2-4	8E3	*926E, B13C

[2] D- AMPLAS UNIT, ED-44823-( ), GROUP 2

DIODE DESIG	LOC	CODE	AMPLAS
2D [5]VRD-4	8F3	*926E, B13C	D4
[5]VRD2-4	8E3	*926E, B13C	D5

APP FIG. 16

DIODE

DESIG	LOC	CODE
[5] VO-4	8H4	*926E B13C

APP FIG. 17

RELAY					
DESIG	47-				
CODE	20b3	28m			
OPTION	2A	2B			
	LOC		LOC		
1A	9H1				
1B	9G1				
1J	9G1				
1U	9G1				
1V	9G1				
1W	9G1				
1X	9G1				
1Y	9G1				
1Z	9G1				
A1	9G1				
A2	9G1				
3A	8F1				
3B	8F1				
3C	8F1				
3D	8F1				
3E	8F1				
3F	8F1				
3G	8F1				
3H	8F1				
3J	8F1				
3K	8F1				
3L	8F1				
3M	8F1				
3N	8F1				
3P	8F1				
3Q	8F1				
3R	8F1				
3S	8F1				
3T	8F1				
3U	8F1				
3V	8F1				
3W	8F1				
3X	8F1				
3Y	8F1				
3Z	8F1				
CO(1)	9H1				

RELAY					
DESIG	MET			UMRT	
CODE				A61D2	
OPTION	F4			1H	
	CORE			CON	
	ASM	LOC		ASM	LOC
12				8H	8HQ
11				8H	8FD
10				8H	8GD
9				8H	8FD
8				8H	
7					
6					
5					
4	8H	8FD			
3	8H	8FD			
2	8H	8GD			
1	8H	8HD			
CO(1)				8H1	8J1

NETWORK			
DET	DES10	LOC	CODE
1H	MET	8H1	185A
1H	UMRT	8G1	185A
	VF-	8H1	180A

APP FIG. 18

RELAY									
DESIG	LTA		LTM		LTMA				
CODE	A270		A270		A44				
OPTION					2B				
	CORE ASM	LOC	CORE ASM	LOC	CORE ASM	LOC	RIGHT ASM	LOC
12	9GR	9J4					M	-
11	M	9G7	R	9G2			12M	-
10	M	9G7	R	9J5			11M	-
9	9M	9G2	8R	9F2			10M	-
8	10M	9GR	11M	9G5			9M	-
7	9M	9H2	8R	9F7				
6	9M		9M	9G7				
5	8M		8M		2M	9G7		
4	7M	9H5	7M	9F7	2GR	9G7		
3	M	9H5	R	9F7	2M	9E7		
2	M	9H6	R	9F7	2M	9E7		
1	M	9H6	R	9F7	R	9G7		
CO(1)		9G1		9G5		9G7	-	

D1 AMPLAS UNIT, ED-44823-( ), GROUP 3

DIODE DESIG	LOC	CODE
D1-D3	9F3	400U

NETWORK

DESIG	LOC	CODE
LR	9G2	185A

RESISTOR

DESIG	LOC	CODE
LR1	9H2	KS-19150,L1 1 MEG

APP FIG. 19

RELAY L(AUX) EAH

DIODE

DESIG	LOC	CODE
LK	8A1	*926E, 944E 533F

APP FIG. 20

RELAY 3-NU

	LOL	NLL
5	8F4	
4	8F7	
3		IB/F6 IB/F6
2		IB/F5 IB/F5

LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT

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ISSUE 2

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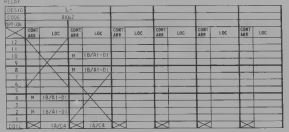
DRAWING SIZE 6S

SD-26030-04-C3

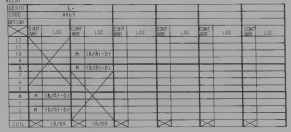
APP FIG. 21



RESISTOR

QNT	DESIG	LOC	CODE
1	L-	1B/B2-02	KS-13491,L3,3300

APP FIG. 22



RESISTOR

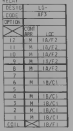
QNT	DESIG	LOC	CODE
1	L-	1B/B2-02	KS-13491,L3 3300

APP FIG. 23

RESISTOR

QNT	DESIG	LOC	CODE
	(2) YA	1B/A3-C9	(1) 1MAL

APP FIG. 24



CIRCUIT NOTES:

101.- DESIG | FUSE AMP | POTENTIAL | ONE PER

ALL (L) HOLD MAGNETS ON A SWITCH IN FIGURES 3 & 4 OR 5 AND ASSOCIATED (L-) RELAYS

A | 1-1/3 | 48V SIG

SIM'L HOLD MAGNETS IN FIG 4 ASSOCIATE WITH HOR GROUPS O-A, AND ONE PER SIM'L HOLD MAGNETS IN FIG 5 ASSOCIATED WITH HOR GROUPS 5-9

B | 1-1/3 | 48V SIG

ROLL HOLD MAGNETS OF ALL SWITCHES IN HUNDREDS JUNCTOR SWITCHES IN FIG 3

C | 1-1/3 | 48V SIG

D | 1-1/3 | 48V SIG | FIG. 4

E | 1-1/3 | 48V SIG | FIG. 8

F | 1-1/3 | 48V SIG | FIG. 8

G | 1-1/3 | 48V SIG | FIG. 8

H | 1-1/3 | 48V SIG | FIG. 8

J | 1-1/3 | 48V SIG | FIG. 8

K | 1-1/3 | 48V SIG | FIG. 8

L | 1-1/3 | 48V SIG | FIG. 8

M | 1-1/3 | 48V SIG | FIG. 8

** | 1/2 AM | 130V SIG | FIGURES 8

N | 1-1/3 | 48V SIG

FRAME PER FIG. 17 OR FIG. 17 AND FIG. 18

2DH

2DJ

GRD

50 FIGURES 1 OR 2 AND DESIG FIG 7 IN ONE VERT GR

FIG 7 IN ONE HOR GR

*2A

2JR

GRD

50 FIGURES 1 OR 2 PER VERT GR IN VERT GROUPS 4-11

*B

GRD

FIG. 3 & 1 PER ALL FIG. 4 FOR THE SAME LINE. LINE FR ON 4 BASIC FR & 1 PER ALL FIG. 4 FOR THE SAME LINE LINE FR ON 8 SUPL FR & 1 PER ALL FIG. 5 FOR THE SAME LINE LINE FR ON 4 SUPL FR

*C

GRD

FIG. 8

*D

GRD

FIG. 8 AND ALL FIG. 4 FOR THE SAME LINE LINE FR ON 4 BASIC FR & 1 PER ALL FIG. 4 FOR THE SAME LINE LINE FR ON 8 SUPL FR

*E

GRD

FIGURES 3 & 20

F

GRD

FIG. 8

G

GRD

FIG. 3

H

GRD

FIG. 8

CIRCUIT NOTES: (CONT)

101.- (CONT) | DESIG | FUSE AMP | POTENTIAL | ONE PER

J | GRD | FRAME FOR FIG. 17 OR FIG 17 AND FIG 18

K | GRD | FRAME FOR FIG 17 AND FIG 18

*K, 2R | GRD | 50 FIGURES 1 OR 2 PER VERT GR IN VERT GROUPS 0-5

*EACH GRD CONN SHALL OBTAIN GRD FROM 2 SEPARATE PATHS TO THE GRD BUS BAR

**ON PUB, RING, & TONE DISTG GR

BATTERY SYMBOL	VOLTAGE RANGE
-48	45-50V
+130	125-135V

CIRCUIT NOTES: (CONT)

102.- (CONT)

FEATURE OR OPTION		APP FIG.	PROVIDE APP FIG OR GRD	QUANTITY
FOR GROUND START COIN LINES		22	H	
FOR OTHER THAN GRD START COIN LINES OR NOT LINES	CONVERTIBLE TO GRD START FOR USE ON COIN LINES	22	V,H	
	FOR LINES, RAN LINE CIRCUITS OR TRUNKS WITH TERM. SERVICE ONLY, FOR INC TOR OR INTERCOLL TRUNKS AND FOR DIAL AID TERM.	21		1 PER 3 LINES
	TEST LINES ASSOC WITH THE MASTER TST CONT CKT AND TRK TEST CKT	21		
	FOR ALL OTHER LINES AND TRUNKS (SEE NOTE 102)		H,V	
FOR LINES SELECTED BY DIALING AT THE PBX	CONVERTIBLE FOR USE AS GRD START COIN LINE CKT	22	V	
	CONVERTIBLE FOR USE AS LINE SELECTED BY DIALING AT PBX	21	H	
LONG LOOP LINE CKT (SEE NOTE 102)	FOR LINES SELECTED BY DIALING AT THE PBX			
	FOR OTHER THAN LINES SELECTED BY DIALING AT PBX AND COIN LINES	CONVERTIBLE FOR USE AS LINE SELECTED BY DIALING AT PBX	22	H,V	1 PER 2 LINES
LINE AND TRK JUNCTOR SWITCHES FOR FRAME CAPACITY OF	190 LINES		3		1 PER LL FR
			4		5 PER LL FR
	240 LINES		3		1 PER LL FR
			4		5 PER LL FR
			5		5 PER LL FR
	290 LINES	BASIC 290 OR BASIC 190 WITH SPLIT 100 FRAME	3		1 PER LL FR
			4		10 PER LL FR
		BASIC 190 WITH 2 SPLIT 50 FRMES	3		1 PER LL FR
			4		5 PER LL FR
			5		10 PER LL FR
	340 LINES		3		1 PER LL FR
			A		10 PER LL FR
			5		5 PER LL FR
	390 LINES		3		1 PER LL FR
			A		15 PER LL FR
	440 LINES		3		1 PER LL FR
			4		5 PER LL FR
			5		1 PER LL FR
	490 LINES		3		1 PER LL FR
			A		20 PER LL FR
	540 LINES		4		20 PER LL FR
			5		5 PER LL FR
	590 LINES		4		25 PER LL FR
			5		25 PER LL FR
SUPPLEMENTARY FR ONLY FOR USE IN BUILDING OUT "N" TYPE LINE, LINE JUNCTORS CIRCUITS	50 LINES		5		5 PER LL FR
	100 LINES		A		5 PER LL FR
NO TEST VERT-VERT RLS Q OF VERT GR 2 ONLY			P		
LINE VERT			Q		
VERT LR RELAYS			A		1 PER VERT GR
VERT GR RESISTORS			23		1 PER 10 LINE VERTS
LINE GR RELAYS			24		1 PER 5 LINE VERTS
MARKER CONN CONTROL CKT, DIAL TONE LOCKOUT CKT, MAKE BUSY CKT, LINE LOAD CONTROL CKT, HOR LR CHECK RLS AND GR RELAYS & JUNCTOR MAKE BUSY RELAYS			R		1 PER LL FR

CIRCUIT NOTES: (CONT)

102.- (CONT)

FEATURE OR OPTION		APP FIG.	PROVIDE APP FIG OR GRD	QUANTITY
LINES NOT TO BE TESTED BY LINE TRS TEST CKT BUT NOT SO IDENTIFIED BY CLASS OF SERVICE				1
TRAFFIC USAGE	JACK CKT	9		1 PER 100,000 PER
	CORD	10		1 PER 1,000,000 PER USER CORD
SERVICE OBSERVING	JACK CKT	11		1 PER 50 LINES
	CORD	12		SERV OBS CORD
TEST LINE JACK CKT		13		1 PER 100 LINES OR PER 10 LINES ON A SO LINE SPLIT SUPL LL FR
RATE TREATMENT REQUIRED (SEE NOTE 103)			15	1 PER LL FR
CLASS OF SERVICE ON A TENS AND UNITS BASIS (100 MAX) (SEE NOTE 104)			4	1
CLASS OF SERVICE ON A HOLD MAGNET BASIS WITHIN A VERTICAL FILE FOR LINE LINK PULSING			25	1 PER VERT FILE 5 PER LL FR (SEE NOTE 203)
FOR ORIGINATING AND TERMINATING TEST LINES ASSOC WITH OFFICE TEST FR			Y,J	ZH, PER LLOG, VGSO, VF2 (SEE NOTE 205)
FOR TEST LINE ASSOC WITH MINI REMOTE OFFICE TEST LINE INTERFACE CKT AND OFFICE IS ARRANGED FOR			ZH	
	20 CLASSES OF SERVICE		17	
	30 CLASSES OF SERVICE			Y,L 1 PER VGSO (SEE NOTE 205)
	50 CLASSES OF SERVICE			YH
	100 CLASSES OF SERVICE			YJ
	RATE TREATMENT			YH,YK
PERCENT LOAD INDICATION				ZK
PAIRED LINE LINK OPERATION				ZL
RANGE EXTENSION OR GAUGUSE CABLE	PROVIDED		20	ZR 1 PER FR
	EACH HOR GR EQUIPPED WITH RANGE EXTENDERS			YD, ZK
	HOR HOR GR NOT EQUIPPED WITH RANGE EXTENDERS			ZQ
	NOT PROVIDED			ZW
LINE IDENTIFICATION FOR PHASE REVERSAL OR CONTINENTAL	LINES APPEARING IN SIX OR LESS VERT GROUPS PER LINE LINK FR			ZJ
	LINES APPEARING IN MORE THAN SIX VERT GROUPS PER LINE LINK FR			ZJ, ZQ
	WHERE LINE LINK FR SERVES LINES ARRANGED FOR CALL WAITING SERVICE			ZZ
	WHERE LLP OR A1B LLP IS ADDED TO OFFICE ALREADY EQUIPPED WITH NO 5 ETS			YF
TEST FOR BUSY (LF) LINE CKT TEST RELAY CONTROL (SEE NOTE 105)			23	1 PER LL FR
AUTO PROGRESS(ON TRK TEST CKT IS NOT PROVIDED			18	
MASTER TRAFFIC CONTROL CHART CYCLE GATE PROVIDED				

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_LINE_LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT	SD-26030-01-DIA
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CIRCUIT NOTES (CONT)

103

NETWORK NO	NETWORK VALUES RESISTANCE IN OHMS	CAPACITANCE IN uF
1	470	0.11
2	150	0.3
3	120	0.3

104

RECORD OF APP FIGURES, WIRING AND APPARATUS CHANGES							
CHANGED ON 755 APP	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS SEE FURN NOTE	OPT	USE IN CIRCUIT STD	A&M	MD	SPL
610B		TF NONE	102	TF			
	TH, TK	NONE	102	TH, TK			
648	YT, Y2	ZH WITH FJ ON NONE	102	Y1, Y2			
656	DIODE			133K	446B		
				813C	425F		

104 (CONT)

RECORD OF APP FIGURES, WIRING AND APPARATUS CHANGES							
CHANGED ON 755 APP	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT STD	A&M	MD	SPL
100	F	NONE	102	F			
	G OR K	E	112, 122	B		C	
	F, H, J	J	102	H	J	J	
	FIG. 14	NONE	102	FIG. 10, FIG. 13			
	FIG. 13	NONE	102				
	5	NONE	102	6			
	9	NONE	104	9			
120	FIG. 16, ELECTRON TUBES	NONE	104	FIG. 16		34AB	
160	2A, 2B	2A	102	2A			
	2C	NONE	102	2C			
	FIG. 17, 18	NONE	102, 104	FIG. 17, 18			
	2D OR 2E	NONE	102, 104	2D		2E	
	2F OR 2G	NONE	102, 104	2G	2F		
140	FIG. 19, 2H	NONE	102	2H			FIG. 19
	ZJ	NONE	102, 108, 115	ZJ			
170	2K, 2L	2K	102	2K, 2L			
200	FIG. 20C, 2N, 2O, 2R OR 2W	2M	102	FIG. 20, 2N, 2O, 2M, 2R			
	2P OR 2Q	2P	117	2Q			2P
220	2S	NONE	102	2S			
230	2T	NONE	113				2T
250	2U, 2V	2U	113	2V	2U		
260	2X OR 2Y	NONE OR 2X	102, 108, 115	2Y			2X
	2Z OR ZB	YS	117	YR			YS
300	ZZ	NONE	102, 115	ZZ			
	JACKS		224AM, 280CA	215A, 280C			
320			113, 204				ZW
330	YC OR YD	ZM, ZO OR ZN WITH YC	102, 108, YD	YC			
	JACKS		105, 106	106A7, L3			145D, L3
340	FIG. 21	FIG. 1 WITH 1 OR H OR NONE	102	FIG. 21			FIG. 1, H
	FIG. ZZ	FIG. 2 WITH Z	102	FIG. ZZ			FIG. 2, Z
	FIG. 23, 24	FIG. 7 OR 24	102	FIG. 23, 24			FIG. 7
	YC	D OR NONE	102, 121	YC			
408	RESISTOR			243, 85-108 Ω, 1/8			145C, 145C

105 NO MORE THAN 8 SELECT MAGNETS MAY BE OPERATED OVER ONE SM-LEAD, WHEN LEAD RESISTANCE IS 40 OHMS OR LESS. IF MAXIMUM LEAD RESISTANCE IS 25 OHMS, A MAXIMUM OF 9 SELECT MAGNETS CAN BE OPERATED.

106 (A&M ONLY)

FEATURE OR OPTION			PROVIDE APP FIG	PROVIDE OR WIRE	QUANTITY
CLASS OF SERVICE	MANUAL RATE TREATMENT	30 OR 60 CLASSES	17	F, H, ZC	1 PER LL FR
	WITH RATE TREATMENT	20 CLASSES OF SERVICE IN 4 TENS AND 5 UNITS PASS 100 MCS	15, 16	R, G, ZC	
		15 CLASSES OF SERVICE IN 4 TENS AND 5 UNITS PASS 100 MCS	15	G, ZC	
TIE LINE PBD CONTROL			17		1 PER VERT FILE MAX 5 PER LL FR

107 (MFR DISC) WHEN APP FIG 19 IS PROVIDED FOR THE OFFICE TEST FRAME ORIGINATING TEST LINE, OMIT STANDARD CROSS CONNECTIONS FOR THE CLASS OF SERVICE UNITS AND CROSS CONNECT AS FOLLOWS

CONDITION	CONNECT FROM CAR	FROM TERM	TO CAR	TO TERM	CONDITION
ORIGINATING TEST LINE OFFICE TEST FR	5	CC-	28	153A (C-5)	CLASS OF SERVICE UNITS AS DETERMINED BY THE OFFICE TEST FR
	5	CC-	29	654A (C-5)	
	16	VC-	29	653	

108 TIP PARTY MESSAGE REGISTER (NON-SMA) LINES AND REMOTE MESSAGE REGISTRATION AUXILIARY LINES MAY NOT BE ASSIGNED TO LINE LINKS ARRANGED FOR PHASE III CENTREX

109 CLASS OF SERVICE AND RATE TREATMENT FOR CENTREX

CLASS			2&M*	20	30	60	100	100
RATE			20					20
CENTREX	PHASE I		X					X
	PHASE II	MANUAL	X		X			X
		DIAL						X
	PHASE III							X

110 WHERE CONDUCTOR LOOP RESISTANCE OF 6 LINK EXCEEDS 1300 OHMS IT SHALL BE CONSIDERED A LONG LOOP

111 WHERE WIDEBAND SERVICE IS REQUIRED OPTION "2T" MUST BE PROVIDED

112 PRIOR TO ISSUE 100, WHERE SHORT CYCLE GATING IS REQUIRED FOR THIS CAT, OPTION "D" MUST BE PROVIDED

113 PRIOR TO ISSUE 250, IF CONTACT PROTECTION IS REQUIRED FOR (L-) RELAY CONTACTS, PROVIDE OPTION "2M" (SEE NOTE 20A)

(MFR DISC)

114 PRIOR TO ISSUE 240, OPTION "2X" AND "2Y" WERE A PART OF OPTION "2M". OPTION "2Y" IS A FALSE OPTION

115 CENTREX LINES CANNOT BE ARRANGED FOR CALL WAITING SERVICE

116 WHEN LINE LINK FRAMES PRIOR TO ISSUE 240 ARE TO FUNCTION WITH RANGE EXTENDERS (EQUIPED PER ISSUE 40 OR LATER, OPTION "2X" MUST BE FURNISHED AND OPTION "2A" REMOVED

117 WHERE IMPROVED CHANNEL TESTING FROM THE MASTER TEST FRAME (MTF) IS REQUIRED, OPT ON "19" MUST REPLACE OPTION "13", AND OPTION "2Q" MUST REPLACE OPTION "2P"

118 PRIOR TO ISSUE 330, OPTION "YC" WAS PART OF OPTION "2N"

119 WHERE OPERATION OF EITHER SHORT-LOOP OR LONG-LOOP LINES OF ANY VERTICAL GROUP IN HORIZONTAL GROUPS ARRANGED FOR UNIGRADE IS REQUIRED, OPTION 48 MUST BE PROVIDED AND OPTION FC MUST BE OMITTED

120 (a) WHERE LLP (OR BIS-LLP) LINE CIRCUITS ARE ADDED TO AN OFFICE NOT ARRANGED FOR ETS OR TO AN OFFICE THAT IS ARRANGED FOR ETS AND THE TEST RELAY IN THE LINE CIRCUIT IS OPERATED VIA THIS CIRCUIT, 91G (B AND OPTION 2S MUST BE PROVIDED

(b) PRIOR TO ISSUE 240, OPTION 2S WAS AN OPTIONAL FEATURE REQUIRED WHEN CENTRALIZED ATTENDANT OPERATION OR AUTOMATIC INTERCEPT USING LINE LINK PULSING WAS PROVIDED

121 PRIOR TO ISSUE 340, OPTION YC WAS PART OF OPTION D. WHEN OPTION YE IS ADDED TO AN EXISTING CKT, PROVIDE OPTION D

122 WHERE LINE LINK FRAMES EQUIPPED WITH OPTION 3 APPARATUS AND WIRING ARE REVISED ON A MARKER GROUP NOT ARRANGED FOR RATE TREATMENT, THAT PART OF OPTION 3 WIRING ASSOCIATED WITH THE WIRING OF THE UCC-RELAYS MUST BE REMOVED. HOWEVER, "1" IS NOT NECESSARY TO REMOVE OPTION 3 APPARATUS

EQUIPMENT NOTES

201 JOB RECORDS NEED NOT BE MAINTAINED FOR OPTIONS "F" "Y", "W" AND "S"

202 VERTICAL GROUP NUMBERS: RELAY AND LEAD DESIGNATION SUFFIXES AS SHOWN, ASSUME STANDARD SPLIT SUPPLEMENTARY BAY ARRANGEMENTS (SEE FS 1013). WHEN ANY ADDITIONAL SPLIT SUPPLEMENTARY BAYS ARE ADDED, THE VERTICAL GROUP NUMBERS FOR THESE BAYS MAY NOT AGREE WITH THOSE OF CAB 11 AND CAB 12 IN THIS EVENT, THE VERTICAL GROUP NUMBERS ASSIGNED TO THE ADDITIONAL BAY(S) SHALL BE ASSUMED TO APPEAR AS RELAY AND LEAD DESIGNATION SUFFIXES IN PLACE OF THOSE SHOWN

203 THESE LEADS MUST BE PROVIDED WHEN THE UNUSED HALF OF AN EXISTING SPLIT SUPPLEMENTARY FRAME NOT BRANDED FOR 100 CLASSES OF SERVICE IS TO BE ASSOCIATED WITH A BASIC FRAME BRANDED FOR 100 CLASSES OF SERVICE

204 LINE LINK FRAMES IN A MARKER GROUP SHALL BE WIRED (SEE CSD 5) SO THAT ALL FRAMES AGREE WITH (a) OR ALL FRAMES AGREE WITH (b) AS INDICATED BELOW

(a) (A&M ONLY) WIRING REQUIRED WHEN FRAMES ARE ADDED TO EXISTING OFFICES HAVING LINE LINK FRAMES MANUFACTURED PER ISSUE 1A OR EARLIER OF 33-2430D-01 AND NONE OF THE FOLLOWING FEATURES ARE PROVIDED IN THE MARKER GROUP:
LINE LINK PULSING
TIE LINE PAD CONTROL (A&M ONLY)
MULTILEVEL PREEMPTION
RANGE EXTENSION
AUTOMATIC INTERCEPT USING LINE LINK PULSING

(b) WIRING REQUIRED FOR NEW OFFICES OR WHEN ANY OF THE FOLLOWING FEATURES ARE PROVIDED IN THE MARKER GROUP:
LINE LINK PULSING
TIE LINE PAD CONTROL (A&M ONLY)
MULTILEVEL PREEMPTION
RANGE EXTENSION
AUTOMATIC INTERCEPT USING LINE LINK PULSING

205 WHEN APP FIG. 17 IS PROVIDED FOR TEST LINES ASSOCIATED WITH THE CCOD-29 TEST FRAME, ONLY HG-9 "0" AND "9" ARE ASSIGNED. WHEN APP FIG 17 IS NOT PROVIDED FOR THE TEST LINES ASSOCIATED WITH THE CCOD-29 TEST FRAME, ONLY THE FIRST TWO HORIZONTAL GROUPS (HORIZONTAL GROUPS 1 THRU 8 OR 9 MAY BE USED FOR OTHER SERVICES OR SUBSCRIBER LINES AS PROVIDED. TWO ADDITIONAL APP FIG 17'S ARE AVAILABLE PER NOTE 102 (CLASS OF SERVICE). THE FIRST TEST LINE WILL BE ASSIGNED TO THE LOWEST NUMBERED OFFICE TEST LINE AND THE LAST TEST LINE WILL BE ASSIGNED TO THE HIGHEST NUMBERED WIRE SPRING CLR IN THE OFFICE

206 PRIOR TO ISSUE 2SG A&PE CONTACT PROTECTION IS PROVIDED AND MOUNTED PER ASSOCIATED 2 WAY TWM DENTION. AFTER ISSUE 2SG A&PE CONTACT PROTECTION IS PROVIDED AND MOUNTED PER ASSOCIATED 2 WAY TWM DENTION.

207 (A&M ONLY) WHEN MORE THAN A DIAL TONE MARKERS ARE GROUPED FOR INCREASED MAY CONNECTIVITY, THE HIGHER NUMBERED LINE LINK FRAMES ARE ASSOC WITH MASTER TO CONT UNIT A AND ARE SERVED BY DIAL TONE MARKERS 0-1 AND THE LOWER NUMBERED LINE LINK FRAMES ARE ASSOC WITH MASTER TO CONT UNIT B AND ARE SERVED BY DIAL TONE MARKERS 2-3. THE MARKER GROUP MUST BE EQUIPPED WITH BOTH DIAL TONE MARKERS 0/1 & 2/3 WHEN 4 DIAL TONE MARKERS ARE PROVIDED. IF GRADING IS NOT PROVIDED, ALL LINE LINK FRAMES ARE ASSOC WITH ONLY MASTER TO CONT UNIT A. THE FOLLOWING TABLE SHOWS THE DISTRIBUTION OF LINE LINK FRAMES WITH THE MASTER TO CONT UNITS FOR THE GRADING INDICATED

NO OF LL FRAMES IN MAR GR	GRADING BETWEEN	LL FRAMES ASSOC WITH MASTER TO CONT UNIT A	LL FRAMES ASSOC WITH MASTER TO CONT UNIT B
33-65	LL 19/20 & LL 28/29	LL 20-28	LL 00-19
66-95	LL 24/25 & LL 29/30	LL 25-54	LL 00-24
96-160	LL 29/30	LL 30-59	LL 00-29

INTERPOSITION NOTES

301 TWO GROUPS OF (S10-9) JACKS ARE PROVIDED; SEE GROUP MULTIPLED TO THE EVEN NUMBERED FRAMES AND THE OTHER TO THE ODD NUMBERED FRAMES

302 LINES THAT HAVE TERMINAT NG SERVICE ONLY ARE ONE IGT ASSOCIATED WITH AN AUX LINE CIRCUIT MAY IGT OPTIONS "+" "++" AND "M" IF THE REGISTER AND COMPLETING MARKER BAY ARRANGES TO ROUTE A DIAL TONE CALL FROM THIS TYPE OF LINE TO A PERMANENT SIGNAL HOLDING TRUNK

303 APP FIG. 19 IS PROVIDED FOR THE OFFICE TEST FRAME ORIGINATING TEST LINE ON LL FR 00 ONLY

304 UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS; CAPACITANCE VALUES ARE IN MICROFARADS; VALUES PRECEDED BY THE SYMBOL "(PLUS) OR "-(MINUS) ARE IN VOLTS

305 THE 500-29 LEADS ARE CONNECTED TO THE VARIOUS LINE HOLD MAGNETS IN ONE OF TWO VERTICAL GROUP PATTERNS. THE VERTICAL GROUP PATTERNS ARE ESTABLISHED BY CROSS CONNECTIONS IN THE TRANSFER LINE IDENTIFIER

EXAMPLE "PATTERN A" 500-29 LEADS IN HGD-9 ASSIGNED TO VERTICAL GROUPS 00 05 EXCLUDING 5-10 (NO TEST VERTICAL)

"PATTERN B" 500 29 LEADS IN HGD-9 ASSIGNED TO VERTICAL GROUPS 00-01, 03-04

EXAMPLE ("2U" OPTION FOR LINES APPEARING IN MORE THAN 510 VERTICAL GROUPS PER LINE LINK FR)

"PATTERN A" 500-29 LEADS IN HGD-9 ASSIGNED TO VERTICAL GROUPS 00-05 EXCLUDING 510 (NO TEST VERTICAL) AND 530-59 LEADS IN HGD-9 ASSIGNED TO VERTICAL GROUPS 06-11

"PATTERN B" 500-29 LEADS IN HGD-9 ASSIGNED TO VERTICAL GROUPS 00,01,03-06, AND 530-59 LEADS IN HGD-9 ASSIGNED TO VERTICAL GROUPS 02,07-11 EXCLUDING 530 (NO TEST VERTICAL)

WORKING LIMITS

(L) RELAYS SEE RANGE CHART IN KEYSHEET

ISSUE 49B

LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT

SD-26030-01-DIC

BELL TELEPHONE LABORATORIES INCORPORATED

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CROSS CONNECTING INFORMATION: (GENERAL)

CROSS CONNECTIONS FOR	CROSS CONN TABLE PART	CIRCUITS WITH RELATED CROSS CONN
SUBSCRIBER LINE CLASS OF SERVICE	1	MARKER CKT
LINE LOAD CONTROL	2	
MARKER PREFERENCE	3	
TIP, RING AND SLEEVE LEADS	4	NO. GROUP CKT
WIRE SPRING SUPPLY TO NON-WIRE-SPRING BASIC FRAME	5	
OFFICE TEST FRAME ORIGINATING AND TERMINATING TEST LINES	6	
LONG LOOP (SEE NOTE 10)	7	
MINI REMOTE OFFICE TEST LINE	8	

WIRE REQUIRED IN GAUGE TYPE BU COLOR WHITE

CROSS CONNECTING INFORMATION: (CONDITION)

PART	CONDITION		CONNECT TERM. TO TERM.		CONDITION	REFERENCE
	SUBSCRIBER LINE CLASS OF SERVICE AND RATE TREATMENT					409
1	CLASSES OF SERVICE	MAX OR ANY FOR MAX OF 30	CLASS IS DETERMINED BY THE	VERT FILE	YD-6 YDD-4 YC---	J OPTION F AND H OPTION	402
					YC---	GRD	405
				HOLD MAG	YD-4 DM YUD-4 YC---	J, F OR H OPTION AND APP FIG. 17	
					YMC-5 CSDD-25		
		MAX OR ANY FOR MAX OF 60	CLASS IS DETERMINED BY THE	VERT FILE	YD-6 YDD-4 YC---	J OPTION F AND H OPTION FIRST 30 CLASSES SECOND 30 CLASSES	402
					YD-6 DM YDD-4 YC---	J, F OR H OPTION AND APP FIG. 17	
				HOLD MAG	YMC-5 CSDD-25		
					YC---	CA OR CB FIRST OR SECOND 30 CLASSES	
		MAX OR ANY FOR MAX OF 100 CLASSES OF SERVICE OR A TENS AND UNITS 84515	CLASS IS DETERMINED BY THE	VERT FILE	YTD-4 YDD-4 YDD-6	CSDD-DN CLASS TENS CSID-19 CLASS UNITS	APP FIG 16 AND H OPTION 403
					YC---	GRD	
				HOLD MAG	YUD-4 YC---		
				WITH RATE TREAT MENT	YTD-4 YDD-4 YMC-5	CSDD-DS CLASS TENS CSID-19 CLASS UNITS	N OPTION AND APP FIGURES 14 AND 17 401, 410
					YUD-4 YC---		
				WITH OUT RATE TREAT	YMC-5 CSDD-DS YMC-5 CSID-19	CLASS TENS CLASS UNITS	
		MAX OR ANY FOR MAX OF 20	CLASS IS DETERMINED BY THE	VERT FILE	YD-6 YDD-4 YC---	CSDD-19 B OPTION AND APP FIG. 16	402
					YDD-4 YC---	CSDD-19 H OPTION AND APP FIG. 16	
				HOLD MAG	YD-6 DM YDD-4 YC---	GRD	405
					YMC-5 CSDD-19		
		MAX OR ANY FOR MAX OF 20 OR MAX ON 100 CLASSES OF MIXED SERVICE	CLASS IS DETERMINED BY THE	VERT FILE	YMD-8 YDD-4 YC---	RATE UNITS FIRST 10 RATE TREATMENT SECOND 10 RATE TREATMENT	6 OPTION 408
					YMD-8 CB		
				HOLD MAG	YMC-5 CSJD-29 YMD-8 YC---	RATE UNITS FIRST 10 RATE TREATMENT SECOND 10 RATE TREATMENT	6 OPTION AND APP FIG. 17 408, 410
					YMD-8 CA		
					YMD-8 CB		
2	LINE LOAD CONTROL (SERVICE OPTION)						403
3	MKR PREF	START LEAD A		MSA	MS-	TERM ASSOC WITH MOR PREFERRED FOR START A	404
		START LEAD B		MSB	MS-	TERM ASSOC WITH MOR PREFERRED FOR START B	
4	TIP AND RING LEAD (*T* AND *R* LEAD) (SERVICE OPTION)			T & R (HMDF)	T & R (HMDF)	LINE VERT CONN 10	LINE, LINE, EXT, TRK CKT OR TEST CKT
					(HMDF)		LINE CKT, TRK CKT OR TEST CKT
	SLEEVE LEAD (*S* LEAD) (SERVICE OPTION)				(HMDF)		LINE CKT, TRK CKT, TEST CKT OR MAKE BUSY CKT
				LS (HMDF)	(HMDF) RC (HMDF) RC (HMDF) RC (HMDF)		SEE NOS 965 EXT (ONE FOR TIP PTT, ONE FOR RING PTT) NO. GROUP CKT
5	WIRE-SPRING SUPL TO NON-WIRE-SPRING BASIC (SERVICE OPTION)			VC--- VB---	S--- *2*DRS		406, 407, 410
6	OFFICE TEST FRAME	CLASS IS DETERMINED BY THE OFFICE TEST FRAME	ORIGINATING TEST LINE		VUS VCCD VMCD VMCD	VF--- GRD GRD GRD	FIG 14, 17 AND OPTION H AND ZH NOTE 305
			TERMINATING TEST LINE		VUS VCCD VMCD HMRB	VF--- GRD GRD HMRD	
7	LONG LOOP (SEE NOTE 10)				LF-	LF-	2W AND YD OPTIONS 411

CROSS CONNECTING INFORMATION: (CONDITION)

PART	CONDITION		CONNECT TERM TO TERM		CONDITION	REFERENCE
8	MINI REMOTE OFFICE TEST LINE CLASS OF SERVICE ONLY	CLASS IS DETERMINED BY THE MINI REMOTE OFFICE TEST LINE IN	20 CLASS OFFICE	VS 3W (MR)	VF---	
				VCCD	GRD	
				MR12	GND	
				MR11	CA OR CB	
			40 CLASS OFFICE	VS 3W (MR)	VF---	
				VCCD	MR10	
				MR13	GND	
				MR12	CA OR CB	
			100 CLASS OFFICE	VS3	VF---	WITHOUT RATE TREAT
				VCCD	GRD	
				HMRD	GND	
				HMRB	GND	
				HMRC	CSDD-DS	WITH RATE TREAT
				HMCD	GND	
				HMRB	GND	
				MR5	CSID-19	
				MR6	GND	
				MR4	CA OR CB	
				MR7	CSDD-DS	
				MR8	VR2	
				MR9	TR2	
			20 CLASS OFFICE	VS 3W (MR)	VF---	WITHOUT RATE TREAT
				VCCD	GRD	
				HMRD	GND	
				HMRC	MR01	WITH RATE TREAT
				MR02	GND	
				MR03	MR00	
				MR04	CA OR CB	
				MR05	MR07	
				MR6	MR08	

DRAWING ISSUE

140	THRU 144
150	THRU 154
160	THRU 164
200	THRU 204
210	
2NCPC	
330	

ISSUE 50A

LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUITS

SD-26030-01-02A

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STANDARD DRAWING

CROSS CONNECTING INFORMATION (LOCATION)

TERMINAL	LOCATION			CROSS CONN TABLE PART	FUNCTIONAL DESIGNATION
	FS	TERM STRIP	NO		
CR,CB	BE1-E2	B	CR,CB A113	1	
CRU	BB1	A	MH13	8	
LSI-9	BE1	B	CSI0-9	1	
CSI0-19	BE0	B	CSI0-19	1	
CS20-29	BE1	B	CSI0-29	1	
CST,CSU	BB1	A,L	CST,CSU	4	
U20-11	IV/A3,C3	A	U20-11	2	
UMU	BB1	G		1,8	
HMC-	BF1	A L	HMC10-9 HMC20-9 HMC30-9	1,8	
HMC0- HMC9	BF1	A L	HMC40-9 HMC50-9 HMC60-9	4,8	
HMR	BB1			8	
HMR-	BF1	A, L	HMR10-9 HMR20-9 HMR30-9	1,8	
HMR2 HMR3	BFQ,F1	A,L	HMR40-3 HMR50-3 HMR60-3	4,8	
HS		HMCF	HS	4	
U20C-02	1B/F3	L-G	U20C-02	7	
U20-11	1B/F3	L-G	U20-11	7	
U85-05	1B/E2,G2	L-C	U85T-05	7	
U95-95	1B/E2,G2	L-C	U95-95	7	
LSI, MLI	1B/F3,G3	L-C	LSI, MLI	7	
LS		UMCF	LS	4	
MR0-12	BFQ,GO, NO,N1	A	A102 A112 MR00 MR12	8	
MR15	BFQ	A	A113 MR15	8	
MS		HCMF	MS	4	
MSO-7	1B/C7,U7	A	MSO-7	3	
MSA	1B/C7	A	MSA	3	
MSB	1B/D7	A	MSB	3	
MMR0	BG1	A	A114 MR14	0	
NS					
R		HMCF, VMCF	R	7	
C		HMCF	S	4	
T		HMCF, VMCF	T	4	
VO-4	BN2	A	VO-4	1,8	
VC-	BG2	B C	S2 G4,A5	5	
V200-11	BN2	A	V200-11	1	
VF-	BH1	A	VFA,B,C	1,5,8	
VS-	1B/B3	B C	S4 S8,A9	5	
V020-11	1B/A3,C3	A	V020-11	2	
VRO-4	BF2	A	VRO-4	1	
VRB0-4	BG2	A	VRB0-4	1	
VTO-4	BN2	A	VTO-4	1	
VUO-4	BG2	A	VUO-4	1	
VU1	BG2	A	VU1	6	

LINE,LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT		SIZE 43	CODE 50A
BELL LABORATORIES	SD-26030-01-		028

CROSS CONNECTION NOTES:

A01. *CANCELLED*

A02. THE (VT-) AND (VR-) TERMINALS CORRESPOND TO VERTICAL FILE NUMBERS WITHIN THE VERTICAL GROUP CONSISTING OF 5 VERTICAL FILES ASSOC WITH ONE (VGR-) RELAY. WHEN THE MARKER GROUP IS ARRANGED FOR A MAXIMUM OF 30 OR 40 CLASSES OF SERVICE, THE CLASS OF SERVICE FOR EACH VERTICAL FILE IS DETERMINED BY THE CROSS-CONNECTION BETWEEN THE (VR-) TERMINAL AND THE (CS-) TERMINAL, WHEN THE MARKER GROUP IS ARRANGED FOR A MAX OF 100 CLASSES OF SERVICE, THE CLASS OF SERVICE FOR EACH VERTICAL FILE IS DETERMINED BY THE CROSS-CONNECTIONS BETWEEN THE (VT-) AND THE (CSO-9) TERMINALS AND BETWEEN THE (VR-) AND THE (CSI0-19) TERMINALS. THE CLASS OF SERVICE ASSOC WITH EACH (CS-) TERMINAL OR EACH COMBINATION OF (CSO-9) AND (CSI0-19) TERMINALS IS DETERMINED BY CROSS-CONNECTIONS IN THE MARKER.

A03. LINE LINK FRAMES WILL BE FURNISHED WITH STRAPS (VGO) TO (GO), (VOI) TO (OI) ETC. FOR VERT GROUPS. WHEN LINE LOAD CONTROL IS PROVIDED THE STRAPS FOR THE VERT GROUPS ON WHICH LINE LOAD CONTROL IS TO BE EFFECTIVE SHOULD BE REMOVED. JOB RECORDS NEED NOT BE MAINTAINED FOR THIS OPTION.

A04. IN EACH LINK LINE FRAME TWO MARKERS SHOULD BE CHOSEN TO BE PREFERRED ON ALTERNATE CALLS. WHEN POSSIBLE THESE SHOULD BE SEPARATED BY ONE OR MORE OF THE REMAINING MARKERS WHICH ARE THEN LESS PREFERRED. EACH MARKER SHALL APPEAR AS A PREFERRED MARKER TO APPROXIMATELY THE SAME NUMBER OF LINE LINK FRAMES. ASSIGNMENT OF PREFERRED MARKERS MAY BE PERIODICALLY SHIFTED TO DISTRIBUTE WEAR.

A05. LINE LINK FRAMES WILL BE FURNISHED WITH TERMINALS (VCOO-11) STRAPPED TO (LOO) TERMINALS. IF THE MARKER GROUP IS ARRANGED FOR A MAX OF 60 CLASSES OF SERVICE, REMOVE GROUND STRAPS AND CROSS-CONNECT THE (VCOO-11) TERMINALS TO THE (CA) OR (CB) TERMINAL AS REQUIRED. JOB RECORDS NEED NOT BE MAINTAINED FOR THIS OPT'ON.

A06. WHEN SPLIT 50-LINE AND SPLIT 100-LINE SUPPLEMENTARY LINE LINK BAYS ARE ADDED TO NON-HI-RC-SPRING BASIC LINE LINK FRAMES WHICH ARE NOT WIRED FOR LINE LOAD CONTROL, THE (G) AND (VG) LEADS SHALL BE STRAPPED AS SHOWN ON CRO. 11 AND CAD. 12. JOB RECORDS NEED NOT BE MAINTAINED FOR THIS OPTION.

A07. WHEN SPLIT 50-LINE AND SPLIT 100-LINE SUPPLEMENTARY LINE (MFR LINK BAYS ARE ADDED TO NON-HI-RC-SPRING BASIC LINE LINK DISC) FRAMES, THE (VC) LEADS SHALL BE STRAPPED AS SHOWN ON CRO. 11 AND CAD. 12. JOB RECORDS NEED NOT BE MAINTAINED FOR THIS OPTION.

A08. THE (VR-) AND (VRG-) TERMINALS CORRESPOND TO VERTICAL FILE NUMBERS WITHIN VERTICAL GROUP OF 5 VERTICAL FILES ASSOCIATED WITH ONE (VGR-) AND ONE (VGT-) RELAY. THESE TERMINALS ARE CROSS-CONNECTED TO (CS0-29) AND (CE,CB) TERMINALS RESPECTIVELY WHEN RATE TREATMENT IS REQUIRED. THIS FEATURE MAY BE USED, IF THE MARKER GROUP IS ARRANGED FOR A MAX OF 100 CLASSES OF SERVICE, TO PROVIDE RATE CLASSES INDEPENDENT OF OPERATION CLASSES. THIS PERMITS A MAX OF 20 RATE TREATMENT CLASSES.

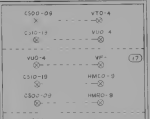
A09. CROSS CONNECTIONS FOR MAX GROUP ARRANGED FOR:

MAX 30 CLASSES OF SERVICE

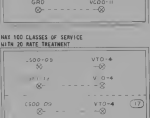
CROSS CONNECTION NOTES (CONT')

MAX 60 CLASSES OF SERVICE

MAX 100 CLASSES OF SERVICE WITHOUT RATE TREATMENT

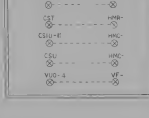


MAX 100 CLASSES OF SERVICE WITH 20 RATE TREATMENT

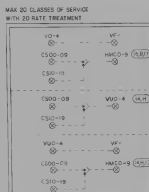


CROSS CONNECTION NOTES: (CONT)

MAX 100 CLASSES OF SERVICE WITH 20 RATE TREATMENT



MAX 20 CLASSES OF SERVICE WITH 20 RATE TREATMENT



CROSS CONNECTION NOTES (CONT)

A10. EACH LINK HOLD MAGNET IN A VERTICAL FILE RSSOC WITH A (VF-) RELAY (APP FIG. 17) MAY BE ASSIGNED A DISTINCTIVE CLASS INDICATION WITH ALL LINES IN A VERTICAL FILE HAVING THE SAME RATE, OR EACH MAY BE ASSIGNED A DIFFERENT CLASS UNITS AND DIFFERENT RATE UNITS WITH ALL LINES IN THE VERTICAL FILE HAVING THE SAME CLASS TEXT.

A11. LSOO-H WITHIN A LONG LOOP HORIZONTAL GROUP MAY BE USED WITH SHORT LOOP LINES BY CHANGING THE LS- CROSS CONNECT FROM LOL TO NLL.

A12. WHEN SPLIT 50-LINE AND SPLIT 100- LINE SUPPLEMENTARY LINE LINK FRAMES ARE ADDED TO NON-HI-RC-SPRING BASIC LINE LINK FRAMES WHICH ARE NOT WIRED FOR LINE LOAD CONTROL, OR FOR MORE THAN 60 CLASSES OF SERVICE THE (G) LEADS SHALL BE STRAPPED AS SHOWN ON CAD II AND CAD 12. JOB RECORDS NEED NOT BE MAINTAINED FOR THIS OPTION.

DRAWING ISSUE	
12D	SDM
11D	SDM
10D	SDM
9D	SDM
8D	SDM
7D	SDM
6D	SDM
5D	SDM
4D	SDM
3D	SDM
2D&C	SDM
1D&CP	SDM
33D	

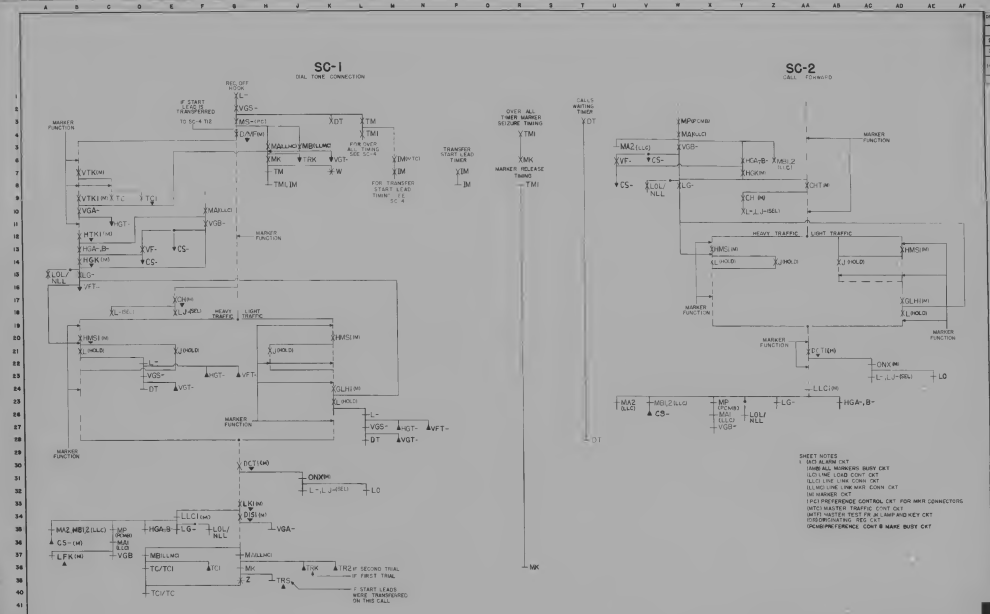
33

LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT

SD-26030-01-D3

BELL TELEPHONE LABORATORIES INCORPORATED

SD-26030-01-D3



LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT

SD-26030-01-E1

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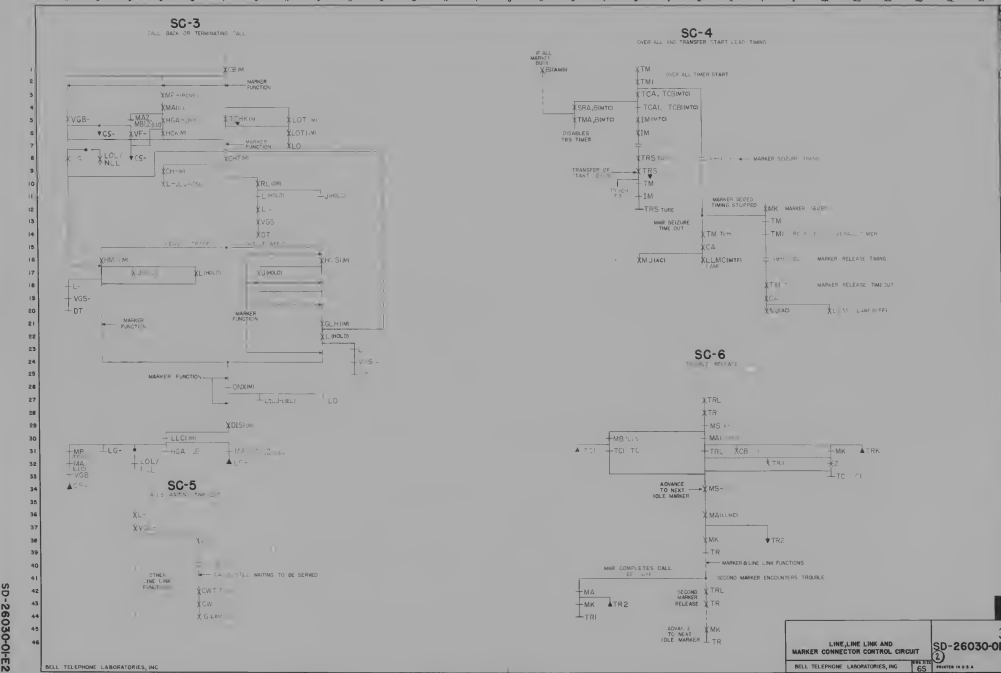
SC-3
CALL BACK OR TERMINATING CALL
SC-4
OVER ALL AND TRANSFER START LEAD TIMING
SC-5
SC-6
MARKER RELEASE TIMING
MARKER RELEASE TIME OUT
MARKER SEIZURE TIMING
MARKER SEIZURE TIME OUT
OVER ALL TIMER START
DISABLES TRS TIMER
TRANSFER OF TEST LEAD
MARKER SEIZED TIMING STOPPED
ADVANCE TO NEXT IDLE MARKER
MAR COMPLETES CALL
SECOND MARKER ENCOUNTERS TROUBLE
SECOND MARKER RELEASE
OTHER LINE LINK FUNCTIONS
MARKER FUNCTION
LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT
BELL TELEPHONE LABORATORIES, INC.
SD-26030-01-E2
ISSUE 3 E D
SHEET 2 OF 65
SD-26030-01-E2

CIRCUIT REQUIREMENTS

LINE, LINK & CONN CONT CKT (LL)

DESIG	CODE	OPTION	FIG		BSP FIG	CONT PRESS	ARM TRVL	BLOCK OR INSULATE	CONN BAT	CONN GRD	TEST SET PREP	SEE NOTE	TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA	REMARKS
MAGNETS																		
J HOLD	325AR X BAR SW		3		1					R(J) MAG TST	GRD	1,2		0		17.8	18.5	WDG ALONE
																39	37	PAR COMB OF LL HOLD MAG AND AUX LL HOLD MAG
L HOLD			3		6					R(L) MAG TST	GRD	3		0		17.5	16.5	
LJ SEL					101				RT OR LB MAG TST		BAT	2,4,5		0		36.5	34.5	
L HOLD	325AP X BAR SW		4		6					R(L) MAG TST	GRD	3		0		17.5	16.5	
NT HOLD			4		6					N(NT) MAG TST	GRD	2		0		90	85	CKT COMB. OF 5(NT) MAG
L SEL			4		101				RT OR LB MAG TST		BAT	2,4,5		0		36.5	34.5	
L HOLD	324AF X BAR SW		5		6					R(L) MAG TST	GRD	3		0		17.5	16.5	
L SEL			8		101				RT OR LB MAG TST		BAT	2,4,6		0		36.5	34.5	
RELAYS																		
B,C	AF54		8		25					U REL TST	GRD			0		30.5	29	STRAP CONTACTS 4,5,6,7,8 & 10
CA	AF63		8		229			8(CA)		U(CA)	GRD			0		7.4	6.7	
CWT	AJ7		8		1			(DT)NO	L(CWT)		BAT	6,8		0		1.7	1.8	
DT	AF512	E	8		207			(MK)O		U(DT)	GRD	2,7		0		28.8	28	
DT	AF32	D	8		208			(MK)O		U(DT)	GRD	2,7		0		32	30.5	
HGA-	286B		8											0		88	80	WINDING ALONE
									B REL TST		BAT	2		0		190	180	CKT COMB. WITH (HGB-)
HGB-	286B OR 286H		8											0		65	80	WINDING ALONE
									B REL TST		BAT	2		0		190	180	CKT COMB. WITH (HGA-)
IM	AF58		8		209					U(IM)	GRD	2		0		27	25.5	
L(AUX)	EA41		19		8/8	H		REMOVE LD FROM LBI OF L(AUX) REL		LBI[L(AUX)]	GRD	2		0		20	19	
L-	1/2AK62		21		8			IT ASSOC (L) HOLD MAG		1U/1L REL TST	GND	2		0		19.5	18.5	TWO (L-) RELAYS MOUNTED TOGETHER
											GRD	2		NO		15	16	
L-	1/2AK63		22		8			IT ASSOC(L) HOLD MAG		1L/3U REL TST	GRD	2		0		22	21	WITH "V" OPTION
											GRD	2		NO		17	18	
											GRD	2		0		11.6	11	TWO (L-) RELAYS MOUNTED TOGETHER
											GRD	2		NO		9	9.5	
											GRD	2		R		3.4	3.6	
LO-4	EA44	N	1		4	H		IT ASSOC(L) HOLD MAG		RT REL TST	GRD	2		0		20	19	
										RT	GRD	2		NO		15	16	
LO-4	EA36	Y	1		4	H		IT ASSOC(L) HOLD MAG		RT	GRD	2		0		22	21	
										RT	GRD	2		NO		17	18	
LO-4	EA36	Z	2		4	L		IT ASSOC(L) HOLD MAG		LT REL TST	GRD	2	S	0		22.5	21.5	WITH "V" OPTION
										LT	GRD	2	S	NO		17.5	18.5	
								IT ASSOC(L) HOLD MAG		LT	GRD	2	P/S	0		11.7	11.1	
										LT	GRD	2	P/S	NO		9	9.5	

TEST NOTES:

1. MAKE JUNCTOR SWITCH BUSY BY INSERTING PLUG INTO ASSOCIATED (JS) JACK.
2. TEST DURING PERIOD OF LIGHT LOAD. SEIZURE OF FRAME BY A MARKER MAY INTERFERE WITH THE TEST.
3. INSULATE THE "LH" LEAD CONTACT ON THE (LG-) RELAY FOR THE HOLD MAGNET BEING WORKED ON
4. CIRCUIT COMBINATION MULTIPLY BY NUMBER OF MAGNETS IN PARALLEL.
5. TEST ONLY WHEN LINK IS IDLE
6. CONTACTS MAKE 5, NO MAKE 8.5 READJUST, MAKE 5.5, NO MAKE 10 TEST
7. OPERATION OF A (VGS-) RELAY WHEN A CALL ORIGINATES WILL SHUNT THE TEST SET.
8. ARMATURE BACK TENSION: MIN 18 GRAMS READJ; 15 GRAMS TEST.

DWG ISS: 1, 20, 3D, 8D, 10D, 12D, 14D, 15D, 16D, 20D, 22D, 30D, 32D

(4 PAGES) PAGE 1

BELL TELEPHONE LABORATORIES, INC

LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT

SD-26030-01-F1

PRINTED IN U.S.A. E-7423 (11-51)

SD-26030-01-F1

CIRCUIT REQUIREMENTS

DESIG	CODE	OPTION	FIG		BSP FIG	CONT PRESS	ARM TRVL	BLOCK OR INSULATE	CONN BAT	CONN GRD	TEST SET PREP	SEE NOTE	TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA	REMARKS
LG-	AF3		7,24		6				L(LG-) REL TST		BAT	1		0		44.5	42	
LO	1/2AK500	ZQ	8							2U(LO)	B/G	1		0		14.5	13.6	MOUNTED WITH (TM1)
LO	AF114	ZP	8		54				L(LO)	U(LO)	B/G	1		0		24.5	23	STRAP CONTACTS 6 & 8
LOL	318U		20		3							4		0	150	52		
LTA	AJ70		18		283			12(LTR)		1U(LTA)	GND		P	0		21.5	19.5	
										2U(LTR)	GRD		S	0		11.2		
LTM	AJ70		18		283			12(LTM)		1U(LTM)	GRD		P	0		21.5	19.5	
								10(LTM)		2U(LTM)	GRD		S	0		11.7		
LTMA	1/2AK4	ZS	18		202					1U(LTMA)	GRD			0		11.9	11.3	
MK	AF49		8		212			(CA)NO		U(MK)	GRD	1		0	150	52		
MRT	1/2AK502	YH	17		2					1L(MRT)	GRD	2		0		27.5	26	MOUNTED WITH (NMRT)
NMRT	1/2AK502	YH	17		2					1U(NMRT)	GRD	2		0		27.5	26	MOUNTED WITH (MRT)
NLL	316U		20		3							4		0		150	52	
TC,TC1	AF52		8		19					U(REL TST)	GRD	1		0		29.5	28	
TM	AF524		8		210			7(MK) (TM1)NO,6(Z)		U(TM)	GRD	1		0		27	25.5	
TM1	AF50	ZP	8		18			(CA)NO (TRS)NO		U(TM1)	GRD	1		0		23.6	22	
														NO		12.5	13.2	
TM1	1/2AF500	ZQ	8		15			(CA)NO (TRS)NO		2L(TM1)	GRD	1		0		15	14.2	MOUNTED WITH (LO)
TR	AF32		8		208									0		32.5	30.5	WINDING ALONE
								12(TR),8(TR1)		U(TR)	GRD	1		0		64	58	CKT COMB. (TR) & (TR1)
TR1	AF50	ZP	8		18									0		23.6	22	WINDING ALONE
								12(TR),8(TR1)		U(TR1)	GND	1		0		62.5	55.5	CKT COMB. (TR) & (TR1)
TR1	1/2AK34	ZQ	8		15			12(TR)(TR)NO		1L(TR1)	GRD	1		0		15	14.2	WINDING ALONE, MOUNTED WITH (TRL)
														0		37.5	35.5	CKT COMB (TR) & (TR1)
TRL	AF114	ZP	8		54			(TR)NO, 10(TRL)		U(TRL)	GRD	1		0		24.5	23	
TRL	1/2AK34	ZQ	8		15			(TR)NO,10(TRL)		2U(TRL)	GRD	1		0		14.5	13.8	MOUNTED WITH (TR1)
TRS	AF32		8		208					U(TRS)	GRD	1		0		32.5	30.5	
TST	AJ12	YB	8		220				L (TST)	U(TST)	B/G	1		0		43	40.5	
VF A,B,C	286B OR 286H		17							T REL TST	GRD	1		0		85	80	
VGA-	AF3		8		8				L REL TST		BAT.	1		0		44.8	42	
VGB-	AF26	8,J	8		5				L REL TST		BAT.	1		0		10.1	9.6	
VGB-	AF168	N	8		81				L REL TST		BAT	1		0		14.8	14.2	
									L REL TST		BAT	1		0		33.5	32	PAR COMB. WITH (VGC)
VGC-	AF165	G	8		81				L REL TST		BAT.	1		0		14.8	14.2	
									L REL TST		BAT.	1		0		33.5	32	PAR COMB. WITH (VGB-)
VGS-	AF19		8		3					U REL TST	GRD	1,2		0		87.5	84	
W	AF87	M	8		207									0		7.2	8.8	WINDING ALONE
								2(Z),8(W)		U(W)	GRD	1		0		17.5	18.5	CKT COMB. (W) & (Z)
W	AF146	K	8		207									0		8.4	8	WINDING ALONE
								2(Z),6(W)		U(W)	GRD	1,3		0		21	19	CKT COMB. (W) & (Z)
Z	AF30	M	8		217									0		8.7	8.2	WINDING ALONE
								2(Z),6(W)		U(Z)	GRD	1		0		18	17	CKT COMB. (W) & (Z)
Z	AF147	K	8		217									0		9.3	9.8	WINDING ALONE
								2(Z),6(W)		U(Z)	GRD	1,3		0		20	18.5	CKT COMB. (W) & (Z)

TEST NOTES:

1. TEST DURING PERIOD OF LIGHT LOAD. SEIZURE OF FRAME BY A MARKER MAY INTERFERE WITH THE TEST.
2. BLOCK NON-OPERATED THE (VGA) RELAY OF ASSOCIATED VERTICAL GROUP. A CALL ORIGINATED IN THE VERTICAL GROUP WILL SHUNT THE TEST SET.
3. ARMATURE BACK TENSION MIN 65 GRAMS READJUST, 60 GRAMS TEST
4. DO NOT TEST WHILE IN CIRCUIT REPLACE WITH SUBSTITUTE RELAY WHILE TESTING

DWG ISS: 1, 2D, 3D, 6D, 8C, 10D, 12D, 14D, 15C, 16D, 20D, 22D, 30D, 32D

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CB

ISSUE 50A

BELL TELEPHONE LABORATORIES, INC

LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT

SD-26030-01-F1

6S (2)

PRINTED IN U.S.A.

CIRCUIT REQUIREMENTS

DESIG	CODE	OPTION	F/G	APPARATUS: SEP FIG	APPARATUS: CONTARM MBOSTRAL	CIRCUIT PREPARATION: BLOCK WIRE	CIRCUIT PREPARATION: TEST CLIP DATA COM BAT	CIRCUIT PREPARATION: TEST CLIP DATA COM GRD	TEST REQ	SEE NOTE	DIRECT CURRENT FLOW PROP: TEST FOR MDC	TEST FOR	AFTER 20MA MA	TEST FOR	READJ MA	REMARKS
6 D163																
TST	446A	1B	8													SEE RSP
VG-4	426F	16	6				2 DIODE 11 TST		BAT	1,2,3 2,4						FWD RES TST REV RES TST
VRG-4 LMG VG-4	426F	17,20	5				2 DIODE 11 TST		BAT	1,3 2,4						FWD RES TST REV RES TST
VG-4 VG-4	426F	20,22	4				3 DIODE 11 TST		BAT	1,2,3 2,4						FWD RES TST REV RES TST

TEST NOTES:

1. TEST DURING PERIODS OF LIGHT LOAD.
2. MAKE ALL VOLTAGE MEASUREMENTS WITH VOLTMETER HAVING SENSITIVITY OF 20,000 OHMS PER VOLT DC OR HIGHER. THE KS-14510 VOLTMETER IS SATISFACTORY.
3. FORWARD RESISTANCE TEST: CONNECT GROUND TO TERMINAL 1 OF DIODE UNDER TEST ADJUST CURRENT TO 100 MA. VOLTAGE MEASURED ACROSS TERMINALS 1 AND 2 OF 426F D ODE SHALL NOT EXCEED 9 VOLT.

426 F DIODE TERMINALS

4. REVERSE RESISTANCE TEST: CONNECT GROUND THROUGH 0.1 MEG RESISTOR TO TERMINAL 2 OF DIODE UNDER TEST. MOMENTARILY GROUND TERMINAL 1 OF DIODE UNDER TEST AND ADJUST CURRENT FLOW TEST SET TO 100 MA. REMOVE GROUND FROM TERMINAL 1 OF DIODE WITH TEST SET KEY OPERATED. THE VOLTAGE ACROSS THE 0.1 MEG RESISTOR SHOULD NOT EXCEED 10 VOLTS. THIS MEASUREMENT SHOULD BE MADE STARTING WITH THE VOLTMETER ON THE 50 OR 60 VOLT SCALE

TIMING REQUIREMENTS

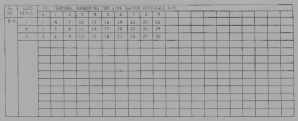
DESIG	CODE	OPTION	F/G	CIRCUIT PREPARATION: BLOCK OR INSULATE	CIRCUIT PREPARATION: CONT	TEST SET PREP: TEST CLIP DATA 1	TEST SET PREP: TEST CLIP DATA 2	TEST SET PREP: SEND KEY	TEST SET PREP: REC SW START	TEST SET PREP: REC SW STOP	SEE NOTE	TIME REQ FOR MIN	TIME REQ MILL-SEC MAX	REMARKS
RELAYS														
TA			5			GRD	U(TH1)	S(CA)	MK	GRD	OG	1	1000	15,000 OPRNG-URT KEY ON MASTER TEST FRAME TO RLS (CA) REL
CWT			8			GRD	U(OT)	S(CWT)	MK	-48V	GRD		400	8000
TRS			8			GRD	U(1M)	U(TRS)	MK	-48V	GRD		800	1,250 STRAP U(1M) TO U(MB) RLL
VACUUM TUBES														
CWT	3 CC		8											SEE RSP
TR	346B OR 346C		9	S(CA) (BK)C(1M1)			G(TH1)				2,9			
TRS	346B OR 346C		9	S(TRS) (MK)C(TH)			BA(AE)(1M)				3,9			

TEST NOTES:

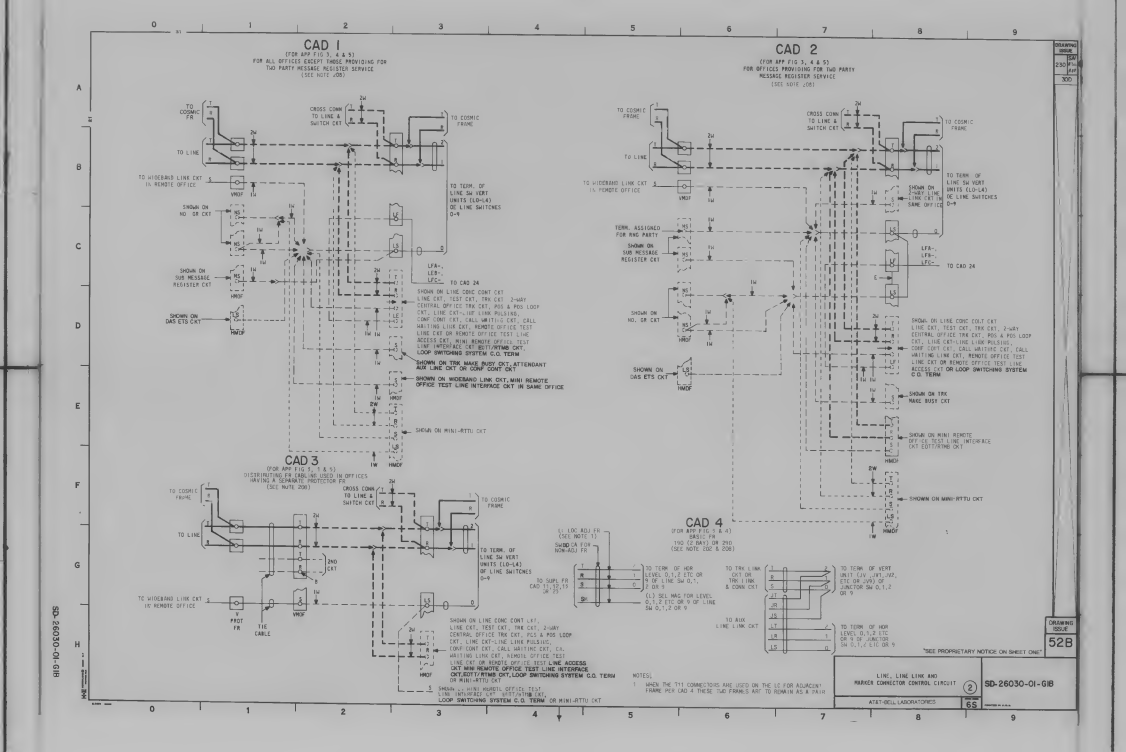
1. CONNECT DIRECT GROUND TO 9 BREAK OF (CA).
2. SHORT CIRCUIT (F) RESISTOR AND CONNECT GROUND TO G(TM1) TO TEST (AG) FORWARD POTENTIAL.
3. SHORT CIRCUIT (E) RESISTOR AND CONNECT GROUND TO G (BREAK OF (LM) TO TEST (AG) FORWARD POTENTIAL.
4. TEST REQUIREMENTS FOR THE 346B OR 346C TUBE ARE

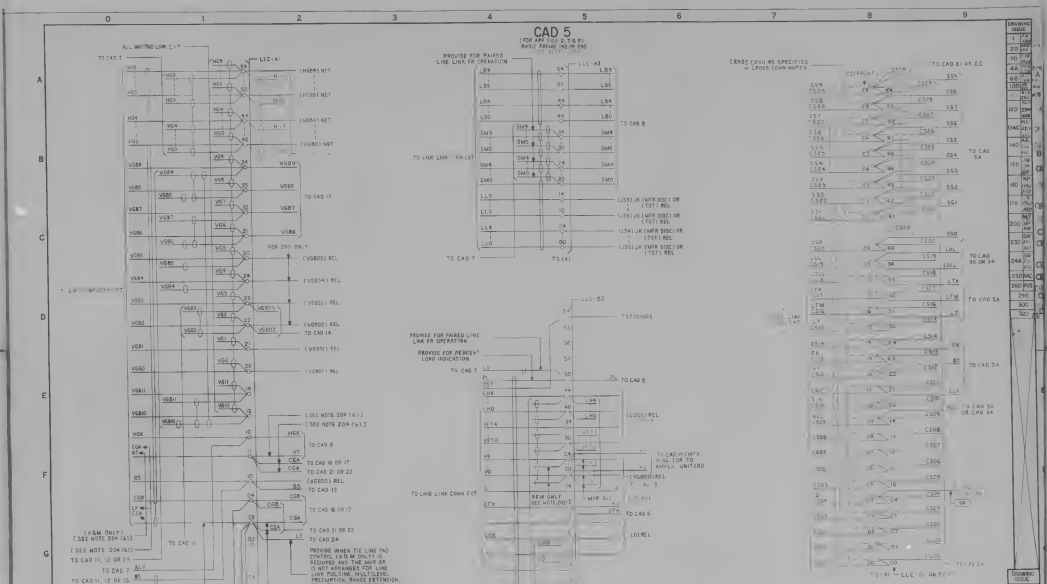
	SG (OR) SAT DC (MA)	AG DROP POT	AG FWD POT
MIN VOLTS	60	70	-
MAX VOLTS	69	90	80

TABLE A



LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT	DWG. SIZE A3	ISSUE 428
BELL LABORATORIES SD-26030-01-		GIA


CAD 1
(FOR APP FIG 3, 4 & 5)
FOR ALL OFFICES EXCEPT THOSE PROVIDING FOR TWO PARTY MESSAGE REGISTERED SERVICE
(SEE NOTE 208)
CAD 2
(FOR APP FIG 3, 4 & 5)
FOR OFFICES PROVIDING FOR TWO PARTY MESSAGE REGISTER SERVICE
(SEE NOTE 208)
CAD 3
(FOR APP FIG 3, 4 & 5)
DISTRIBUTING FR (AND NB USED IN OFFICES HAVING A SEPARATE PROTECTOR FR)
(SEE NOTE 208)
CAD 4
(FOR APP FIG 3, 4 & 5)
BASIC FR
110 (C DAT) OR 210
(SEE NOTE 202 & 208)
TO COSMIC FR
TO LINE
CROSS CONN TO LINE & SWITCH CKT
TO COSMIC FRAME
TO HYBRID/AB LINK CKT IN REMOTE OFFICE
VNOF
SHOWN ON NO. 5R CKT
SHOWN ON SUB MESSAGE REGISTER CKT
SHOWN ON DAS ETS CKT
TO TERM. OF LINE SW VERT. UNITS (L0-L4) OF LINE SWITCHES 0-9
LF8-, LF9-, LF5-
TO CAD 24
SHOWN ON LINE CONC CONT CKT LINE CKT, TEST CKT, TRK CKT, 2-WAY CENTRAL OFFICE TRK CKT, PDS & PDS LOOP CKT., LINE CKT-LINE LINK PULSING, CONF CONT CKT, CALL WAITING CKT, CALL WAITING LINK CKT, REMOTE OFFICE TEST LINE CKT OR REMOTE OFFICE TEST LINE ACCESS CKT, MINI REMOTE OFFICE TEST LINE INTERFACE CKT EDIT/XTNO CKT, LOOP SWITCHING SYSTEM C.O. TERM
SHOWN ON TRK MAKE BUSY CKT, ATTENDANT AUX LINE CKT OR CONF CONT CKT
SHOWN ON WIDEBAND LINK CKT, MINI REMOTE OFFICE TEST LINE INTERFACE CKT IN SAME OFFICE
SHOWN ON MINI-RTTU CKT
TO CROSS CONN TO LINE & SWITCH CKT
TO TERM. OF LINE SW VERT. UNITS (L0-L4) OF LINE SWITCHES 0-9
TO SUPR FR CAD 11-13,19 OR 20
TC WIDEBAND LINK CKT IN REMOTE OFFICE
FROT FR
TIE CABLE
SHOWN ON LINE CONC CONT CKT, LINE CKT, TEST CKT, TRK CKT, 2-WAY CENTRAL OFFICE TRK CKT, PDS & PDS LOOP CKT., LINE CKT-LINE LINK PULSING, CONF CONT CKT, CALL WAITING CKT, CA. WAITING LINK CKT, REMOTE OFFICE TEST LINE CKT OR REMOTE OFFICE TEST LINE ACCESS CKT, MINI REMOTE OFFICE TEST LINE INTERFACE CKT, EDIT/XTNO CKT, LOOP SWITCHING SYSTEM C.O. TERM OR MINI-RTTU CKT
SHOWN ON MINI REMOTE OFFICE TEST LINE INTERFACE CKT LOOP SWITCHING SYSTEM C.O. TERM OR MINI-RTTU CKT
L (LOC ADJ) FR (SEE NOTE 11)
SHOWN ON NON-ADJ FR
TO TERM OF HDR LEVEL 0, 1, 2 ETC OR 5 OF LINE SW 0, 1, 9 OR 1
TO TRK LINK CKT OR TRK LINK & CONN CKT
TO TERM OF VERT UNIT CAV, 1WT, 2WT, 2DR, 2DRV OR JUNCTOR SW 0, 1, 2 OR 9
(3) SEL MAG FOR LEVEL 0, 1, 2 ETC OR 9 OF LINE SW 0, 1, 2 OR 9
TO AUX LINE CKT
TO TERM OF HDR LEVEL 0, 1, 2 ETC OR 9 OF JUNCTOR SW 0, 1, 2 ETC OR 9
NOTES:
WHEN THE T11 CONNECTIONS ARE USED ON THE LC FOR ADJACENT FRAME PER CAD 4 THESE TWO FRAMES ARE TO REMAIN AS A PAIR.
"SEE PROPRIETARY NOTICE ON SHEET ONE"
LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT
SD-26030-01-GIB
AT&T-BELL LABORATORIES
6S
DRAWING ISSUE
DRAWING SIZE
52B
SD-26030-01-GIB



LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT

SD-26030-01-GIC

BELL TELEPHONE LABORATORIES, INC

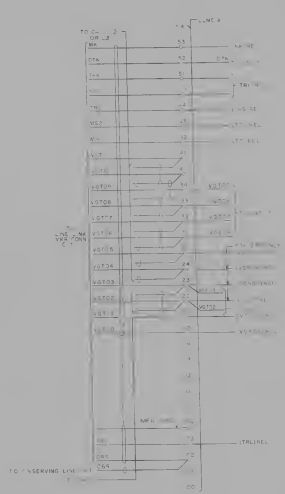
ISSUE 3

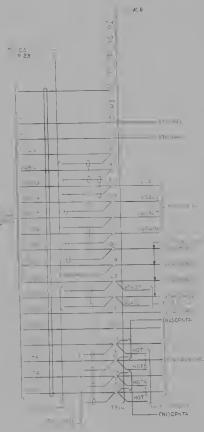
DATE 6-65

SHEET 47A OF 47A SHTS

CAD 5A

CAD 6
(FOR APP FIGS 5B&1
BASIC FRAME
160 OR 200





DRAWING ISSUE

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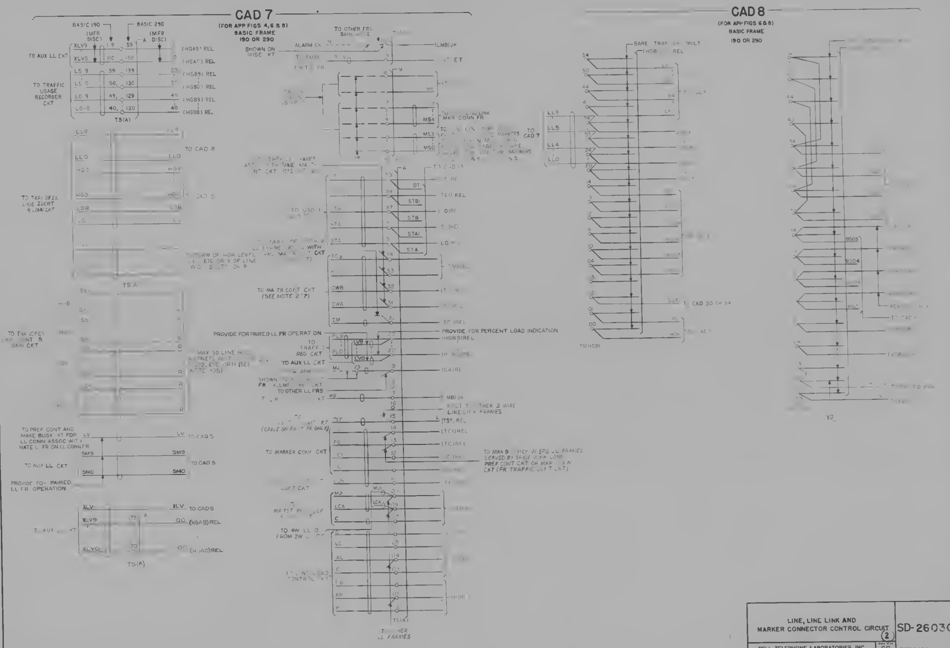
40B

LINE, LINE LINK AND
MARKER CONNECTOR CONTROL CIRCUIT

SD-26030-01-62

BELL TELEPHONE LABORATORIES, INC

SD-26030-01-62



DRAWING ISSUE

1	
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3D	
4A	
12D	EDM AHD
14D	EJB
15D	JM
16D	NP
17D	PGJ AHD
18A	GEL
19D	GEL
20D	MLT SAV AHD
25D	RAC
26D	PVS
29D	
30D	
32D	
33D	

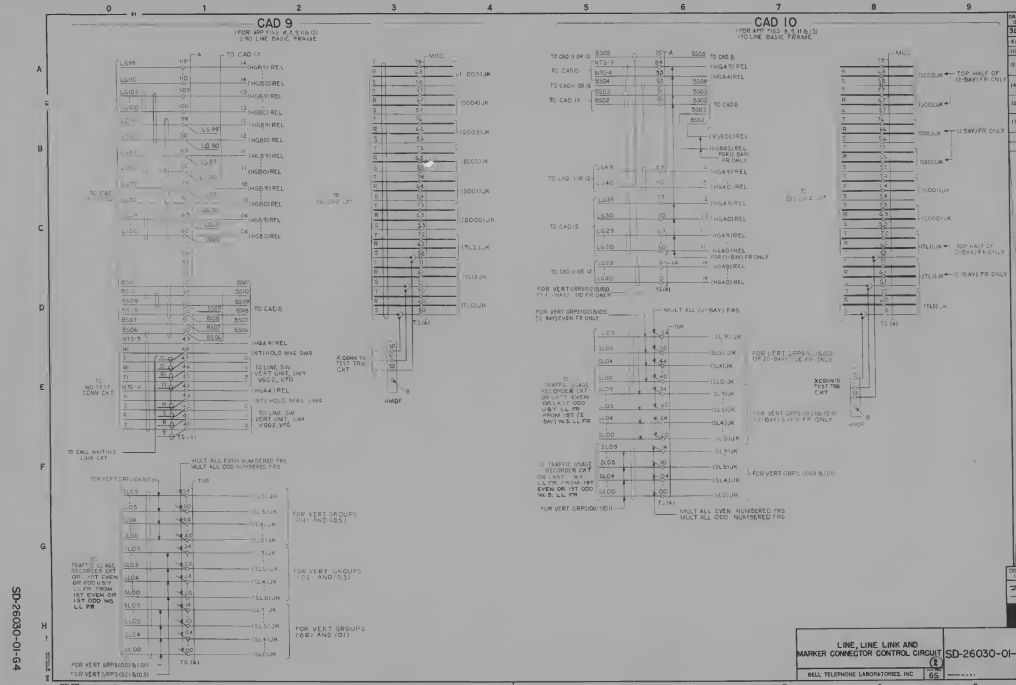
DRAWING ISSUE 44B

LINE, LINE LINK AND
MARKER CONNECTOR CONTROL CIRCUIT (2)

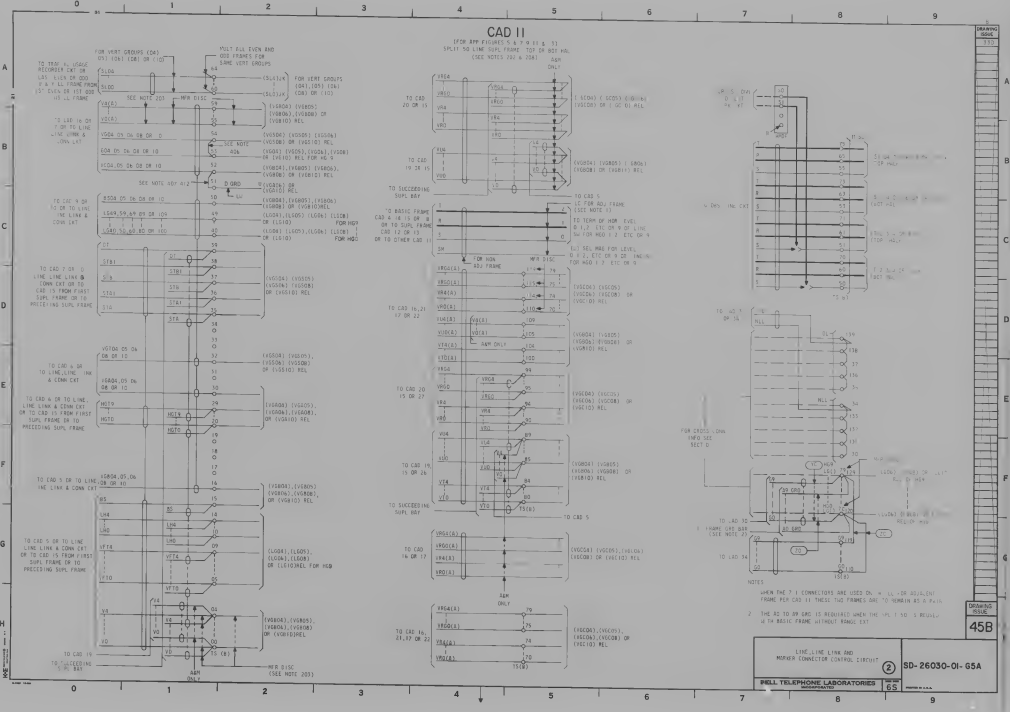
SD-26030-01-G3

BELL TELEPHONE LABORATORIES INC 6S

SD-26030-01-G3

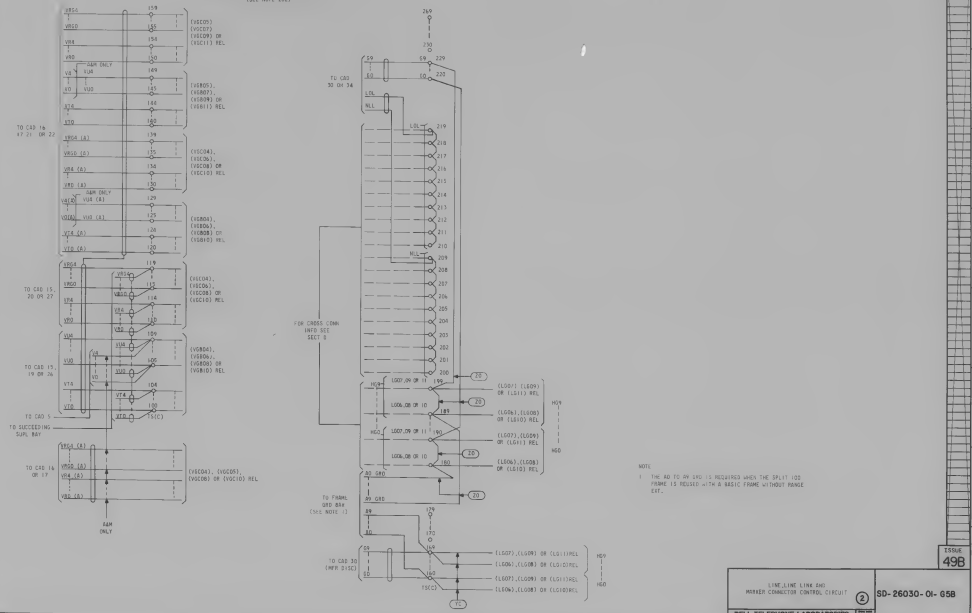


SD-26030-01-G4


CAD II
(FOR APP FIGURES 5 & 7 IN SE & 53)
SPLIT 50 LINE SUPL FRAME TOP OR BOT HAL
(SEE NOTES 202 & 203)
DRAWING ISSUE
45B
LINE, LINE LINK AND
MARKER CONNECTOR CONTROL CIRCUIT
SD-26030-01-65A
BELL TELEPHONE LABORATORIES
INCORPORATED
65
SD-26030-01-65A

PART OF CAD 12

(FOR APP FIGURES 4,5,7,9,11 AND 13)
SPLIT 100 LINE SUPL FRAME, TOP OR BOT-HALF
(SEE NOTE 202)



NOTE

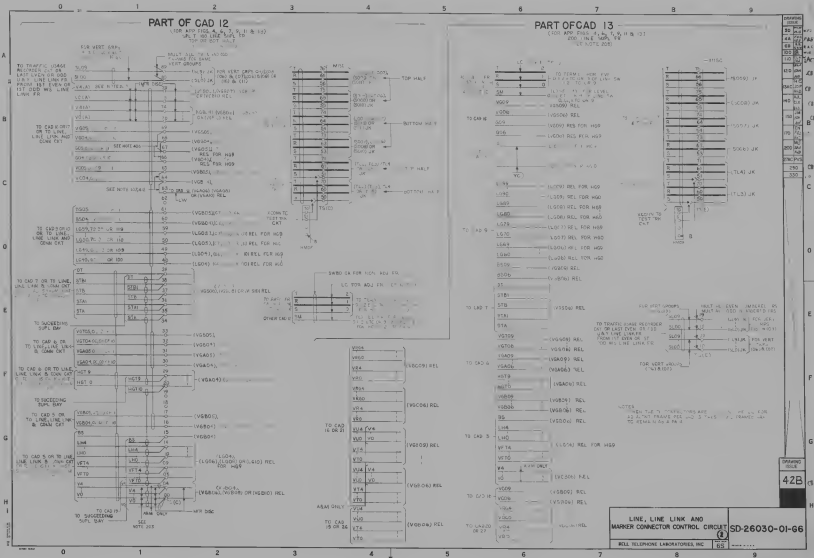
1 THE AD TO PV SYC IS REQUIRED WHEN THE SPLIT 100 FRAME IS REUSED WITH A BASIC FRAME WITHOUT RANGE EXT.

LINE,LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT	SD-26030-01-65B
BELL TELEPHONE LABORATORIES INCORPORATED	65

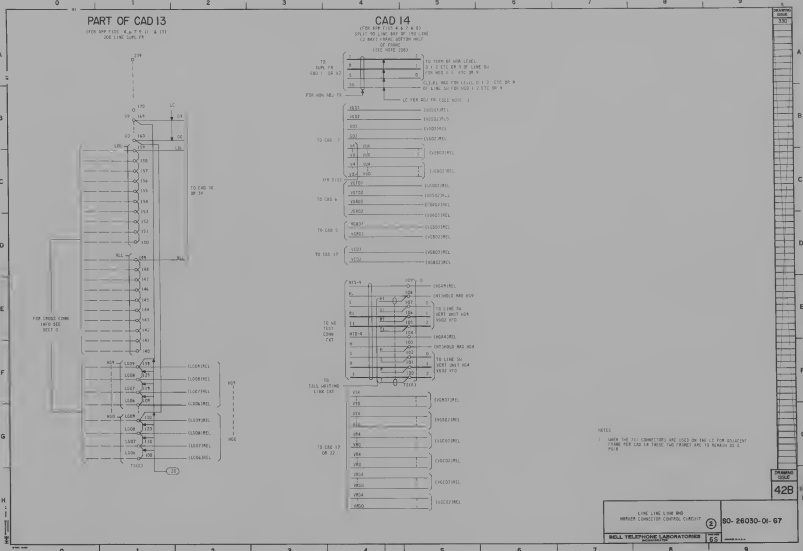
DRAWING ISSUE 330

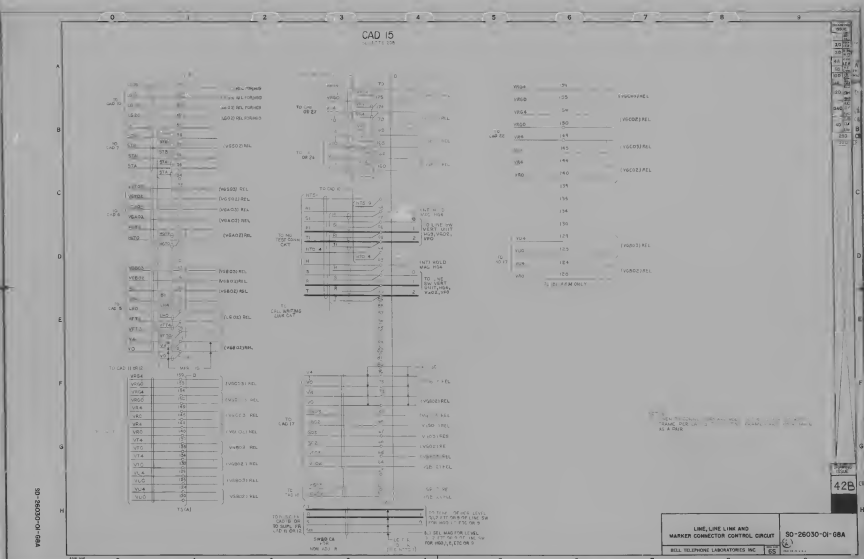
ISSUE 49B

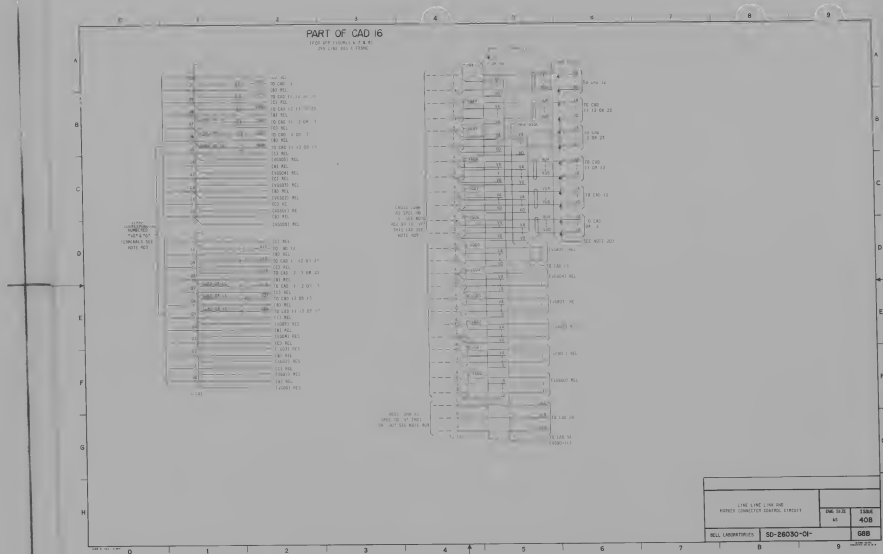
SD-26030-01-65B

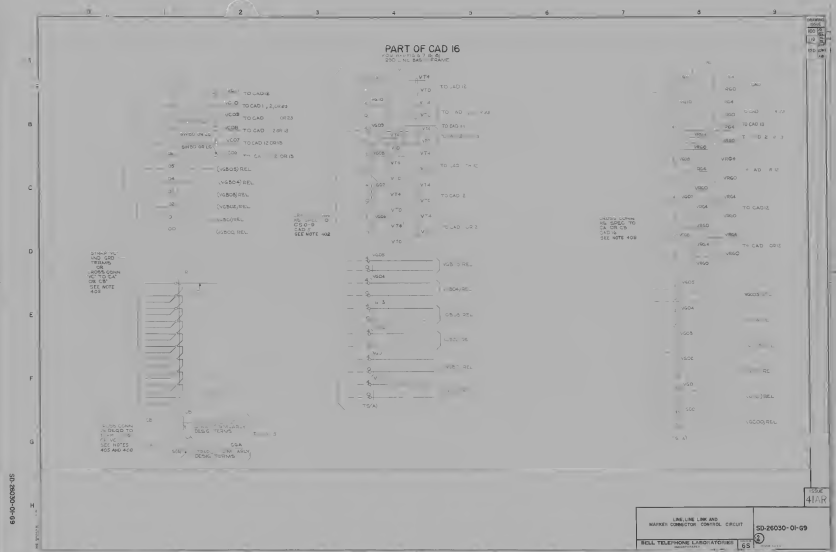


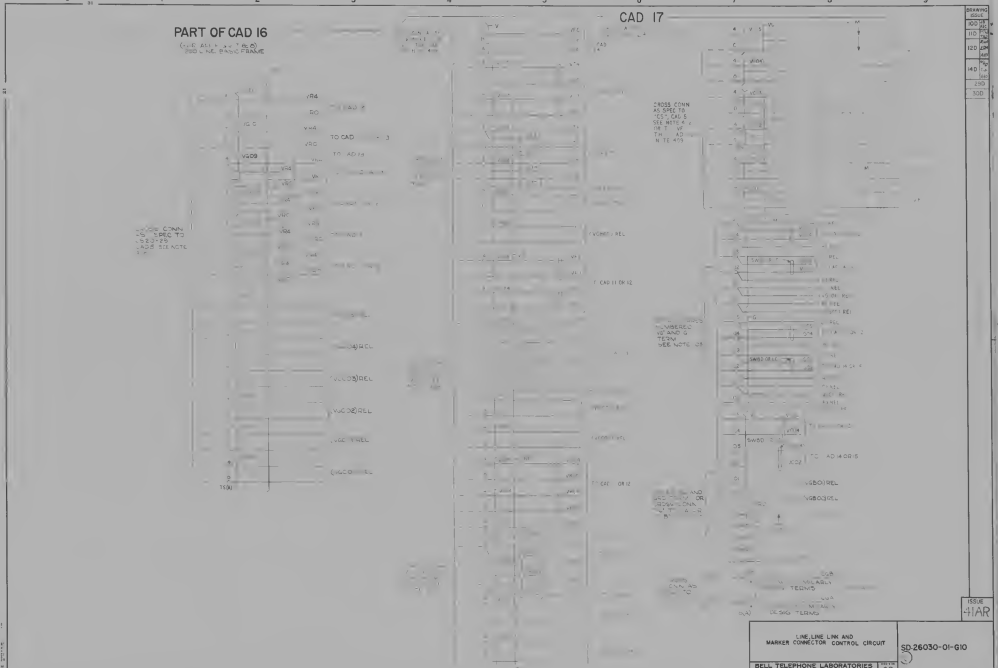
SD-26030-01-66


PART OF CAD 13
CAD 14
LINE LINE LOAD AND
MEDIUM CONNECTOR CONTROL CIRCUIT
BELL TELEPHONE LABORATORIES
INCORPORATED
90-26030-01-67
428
NOTES:


CAD 15
42B
LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT
BELL TELEPHONE LABORATORIES INC
50-26030-01-08A
SD-26030-01-08


PART OF CAD 16
LINE AND TRUNK H & R
SEE LINE AND TRUNK
LINE LINK AND
MARKER CONNECTOR CONTROL CIRCUIT
BELL LABORATORIES
SD-28030-01
SHEET
408
GBB


PART OF CAD 16
LINE LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT
SD-26030-01-09
BELL TELEPHONE LABORATORIES


PART OF CAD 16
CAD 17
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TO CAD 11 OR 12
TO CAD 14 OR 15
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CROSS CONN AS SPEC TO
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LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT
SD-26030-01-G10
BELL TELEPHONE LABORATORIES
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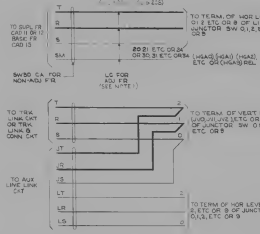
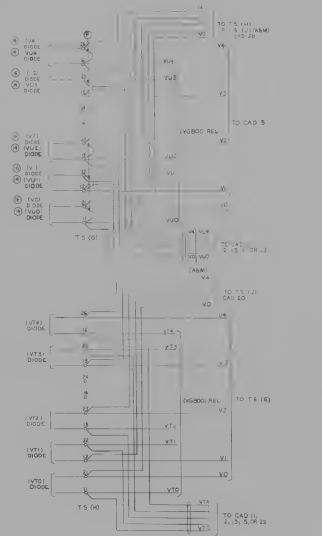
SD-26030-01-G10

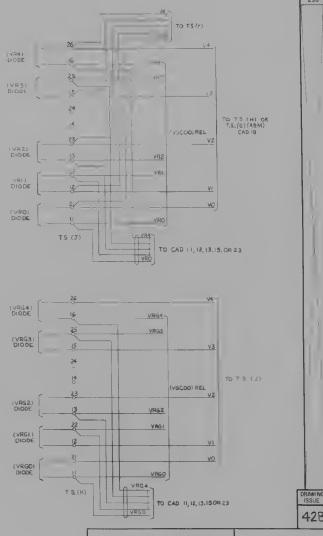
CAD 18
(TO BE ADDED TO BASIC FRAME 190 OR 290)



CAD 19 (MFR DISC.)
(FOR APP FIG 4 & 5)
190 OR 290 BASIC FRAME



CAD 20 (A & M ONLY)
(FOR APP FIG 15)
190 OR 290 BASIC FRAME



NOTES:
1. WHEN T CONNECTORS ARE USED ON LC FOR ADJACENT FRAME THESE TWO FRAMES ARE TO REMAIN AS A PAIR

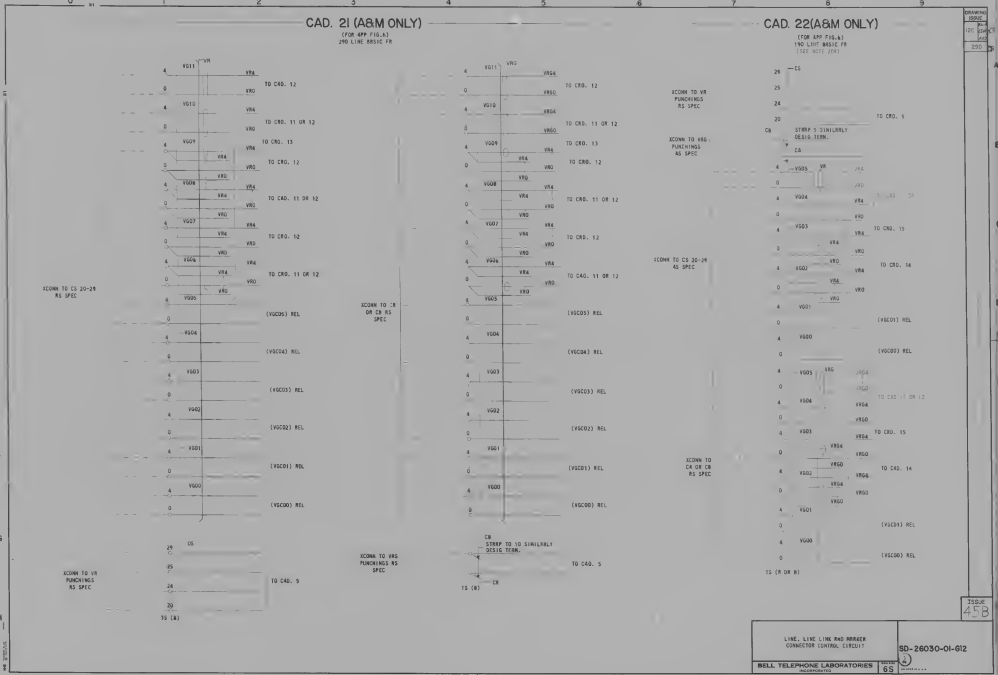
DRAWING ISSUE 428 C

LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT

SD-26030-01-GII

BELL TELEPHONE LABORATORIES INCORPORATED

119-10-050285



LINE, LINE LINE RAD NUMBER CONNECTOR CONTROL CIRCUIT

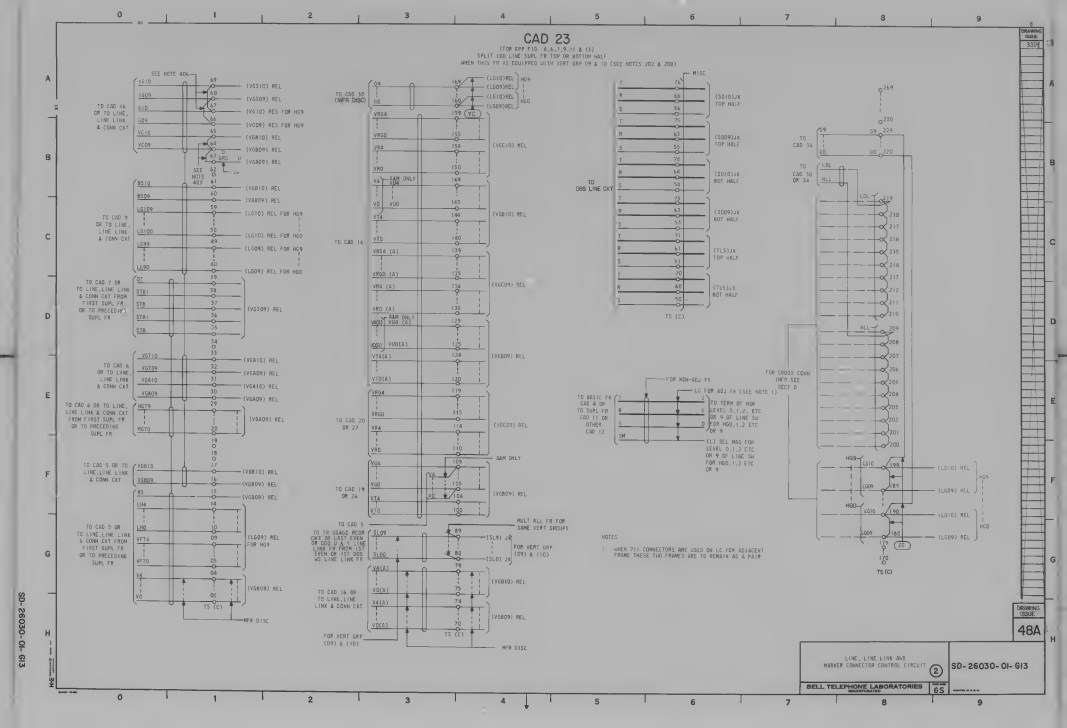
SD-26030-01-02

BELL TELEPHONE LABORATORIES INCORPORATED

SS

CAD 23

(FOR APP FIG. 4,6,7,9,11 & 13)
SPLIT TOD LINE SUPL FR TOP OR BOTTOM HALF
WHEN THIS FR IS EQUIPPED WITH VERT GRP DN & UD (SEE NOTES 202 & 203)



DRAWING NUMBER 3301

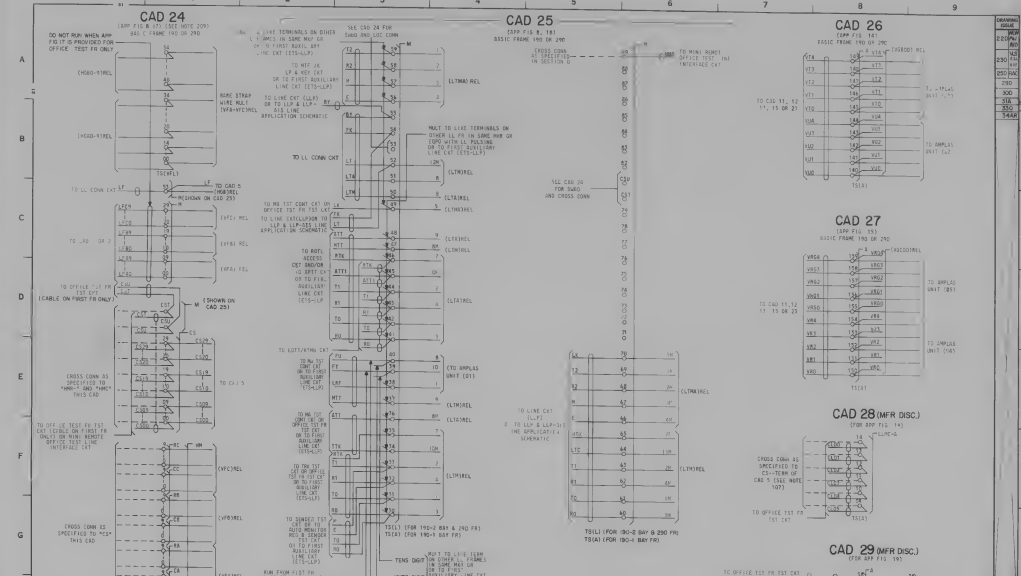
DRAWING ISSUE 48A

LINE, LINE LINK AND MARKER CONNECTOR CONTROL CIRCUIT (2)

SD-26030-01-613

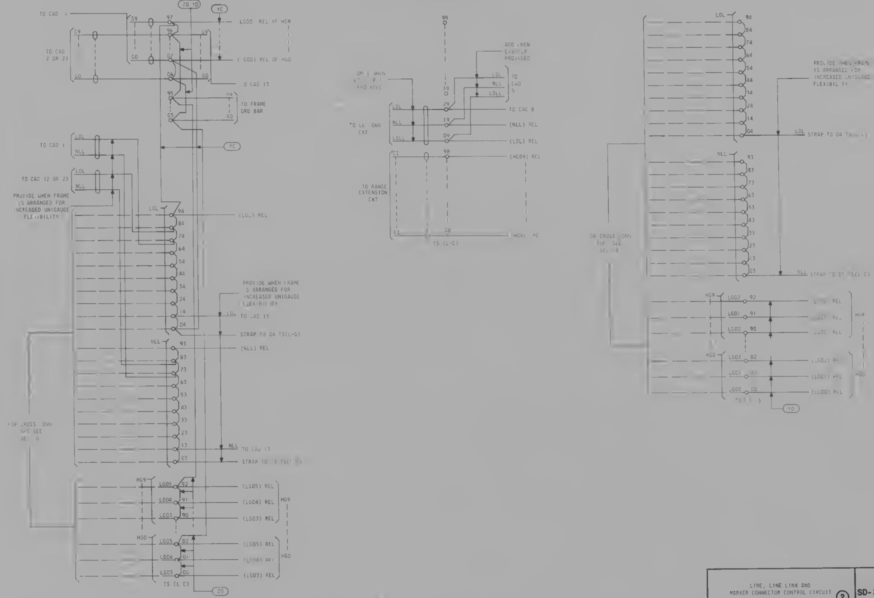
BELL TELEPHONE LABORATORIES INCORPORATED 6S

SD-26030-01-613


CAD 24
(APP FIG 9, 127, (SEE NOTE 209)
BAY FRAME 190 OR 290
DO NOT RUN WHEN APP FIG IT IS PROVIDED FOR OFFICE TEST FR ONLY
(HG60-91REL
(HG60-91REL
TS(AFL)
WIRE STRAP WIRE MAT (WFA-91CREL
TO LL CONN CKT
TO CAD 5 (HGREL) (SHOWN ON CAD 25)
(VFC) REL
TO JID 24 2
(VFB) REL
(VFA) REL
TO OFFLINE TST FR TST CKT (CABLE ON FIRST FR ONLY)
(SHOWN ON CAD 25)
CROSS CONN AS SPECIFIED TO "HMO-1" AND "FMO" PUNCH THIS CARD
TO CAD 5
TO OFF LINE TEST FR TST CKT (CABLE ON FIRST FR ONLY) TO MINI REMOTE OFFICE TEST FR (WITH ECF CKT)
(VFC)REL
(VFB)REL
(VFA)REL
CROSS CONN AS SPECIFIED TO "FC" PUNCH THIS CRD
TS(FL) (FOR 190-3 BAY & 290 FR)
TS(A) (FOR 190-1 BAY FR)
(VFC)REL
(VFB)REL
(VFA)REL
TO CAD 16 OR 17
CAD 25
(APP FIG 9, 181)
BASIC FRAME 190 OR 290
SEE CAD 24 FOR SWBD AND LOC CONN
TO MTF JK LP & HEX CKT OR TO FIRST AUXILIARY LINE CKT (ETS-LP)
TO LINE CKT (LLP) OR TO LLP & LLP-SIS LINE APPLICATION SCHEMATIC
TO LL CONN CKT
MULT TO LIKE TERMINALS ON OTHER LL FR IN SAME MWR GR COPD WITH LL BUILDING OR TO FIRST AUXILIARY LINE CKT (ETS-LLP)
TO MG TST CONT CKT OR OFFICE TST FR TST CKT
TO LINE CKT(LLP)SUB TO LLP & LLP-SIS LINE APPLICATION SCHEMATIC
TO ROTL ACCESS CKT (MO/ON TO APPT CKT OR TO FIRST AUXILIARY LINE CKT (ETS-LP
TO LOTT/WTNG CKT
TO MG TST CONT CKT OR OFFICE TST FR TST CKT OR TO FIRST AUXILIARY LINE CKT (ETS-LP)
TO ON TST CONT CKT OR OFFICE TST FR TST CKT OR TO FIRST AUXILIARY LINE CKT (ETS-LP)
TO SUNDRY TST CKT OR TO AUTO MONITOR RELAY TRUNCK OR TO FIRST AUXILIARY LINE CKT (ETS-LP)
RUN FROM FIRST FR IN SAME MWR GR TO LAST FR IN SAME MWR GR TO FIRST AUXILIARY LINE CKT (ETS-LP)
TENS DIGIT
UNITS DIGIT
(LTM)REL
(LTA)REL
(LTN3)REL
(LTR)REL
(LTC)REL
(LTM)REL
(LTA)REL
(LTR)REL
(LTC)REL
(TO AMPLSS UNIT (D1)
TS(LL) (FOR 190-2 BAY & 290 FR)
TS(A) (FOR 190-1 BAY FR)
TENS DIGIT (OTHER LL FRAMES IN SAME MWR GR
UNITS DIGIT TO FIRST AUXILIARY LINE CKT (ETS-LP)
CROSS CONN AS SPECIFIED IN SECTION D
TO MINI REMOT OFFICE TEST FR INTERFACE CKT
(LTM)REL
(LTA)REL
TO LINE CKT (LLP) & LLP-SIS LINE APPLICATION SCHEMATIC
TS(LL) (FOR 190-2 BAY & 290 FR)
TS(A) (FOR 190-1 BAY FR)
CAD 26
(APP FIG 141)
BASIC FRAME 190 OR 290
(HG60) REL
TO CAD 11, 12 17, 15 OR 27
TO AMPLSS UNIT (L2
TS(A)
CAD 27
(APP FIG 155)
BASIC FRAME 190 OR 290
(HG60)REL
TO CAD 11,12 17, 15 OR 27
TO AMPLSS UNIT (B5)
TO AMPLSS UNIT (D5)
TS(A)
CAD 28 (MFR DISC.)
(FOR APP FIG 19)
CROSS CONN AS SPECIFIED TO "CS-1" TERM OF CAD 5 (SEE NOTE 107)
TO OFFICE TST FR TST CKT
TS(A)
CAD 29 (MFR DISC.)
(FOR APP FIG 19)
TO OFFICE TST FR TST CKT (CABLE ON FIRST FR ONLY)
CROSS CONN AS SPECIFIED TO TS(A) OF CAD 16 OCS PCKS OF CAD 5 (SEE NOTE 107)
(CLA)REL
TS(A)
DRAWING ISSUE
49B
LINE, LINE LINK CKT
MARKER CONNECTOR CONTROL CIRCUIT
SD-26030-01-GI4A
BELL TELEPHONE LABORATORIES
INCORPORATED
6S
SD-26030-01-GI4A

CAD 30 (MFR DISC)

(FOR APP FIGURES 7,8, & 20)
290 FRAME WITH RANGE EXTENSION



DRAWING ISSUE 33D

DRAWING ISSUE 40B

LINE, LINE LINK AND
MARKER CONNECTOR CONTROL CIRCUIT ②

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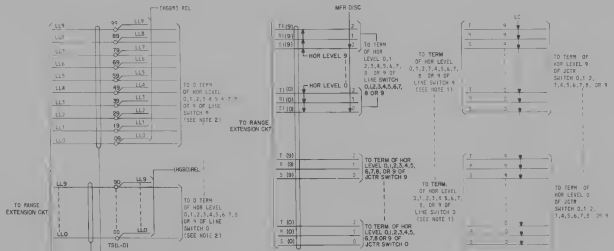
CAD 31
(FOR APP FIG. 5 & 8)
2YO FR WITH RANGE EXTENSION

CAD 32
(FOR APP FIG. 7 & 8)
2YO FR SIXTH SONIC EXTENSION
(SEE NOTES 208 & 209)

CAD 33
(FOR APP FIG. 11)
LINE SLIP MULTIPLE
2YO FR WITH TRUNK EXTENSION



SHEET NOTES

1. WHEN A HORIZONTAL GROUP IS EQUIPPED FOR RANGE EXTENSION THE T AND R LEADS OF THE LINK SLIP MULTIPLE AT THE LINE SWITCH SHALL BE DISCONNECTED, INSULATED, AND TIED BACK INTO THE FORM.

2. WHEN A HORIZONTAL GROUP IS EQUIPPED FOR RANGE EXTENSION THE LG-9 LEADS AT THE LINE SWITCH, AND THE LG-9 LEADS AT THE JUNCTOR SWITCH SHALL BE DISCONNECTED, INSULATED AND TIED BACK INTO THE FORM.

DRAWING ISSUE
A1
200
210
230
240 PVC
250 PVC
300

DRAWING ISSUE
428

SD-26030-01-GI5

LINE, LINE LINK AND
MARKER CONNECTOR CONTROL CIRCUIT

SD-26030-01-GI5

BELL TELEPHONE LABORATORIES
INCORPORATED

SHEET NO. 83

CIRCUIT NOTES:
ID1

RECORD OF FIGURES, WIRING AND APPARATUS CHANGES							
CHG'D ON ISSUE	IF JOB RECORD DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT			
				STD	A & M	M D	
2D	Y OR Z	Z		Y		Z	
	V, W OR X	W OR X		V		W, X	
3D	ZB	ZA		ZB		ZA	
4B	FIG B	FIG A		FIG B		FIG A	
5B	ZD	ZC		ZD		ZC	

DWG ISS	CD ISS	DWG ISS	CD ISS	DWG ISS	CD ISS
1	1	2D	2D	3D	2D APP 1D

DWG ISS	EE OR CD ISSUED	DATE ISSUE	DRAWN	APP'D
4B	2D APP 2B	11-2-77	R J F	JOC GFC EJL
5B	2D APP 3B	5/17/83	BJG OEM HSJ	PLM NAR DCJ

FIG. 1
OSCILLATOR CIRCUIT

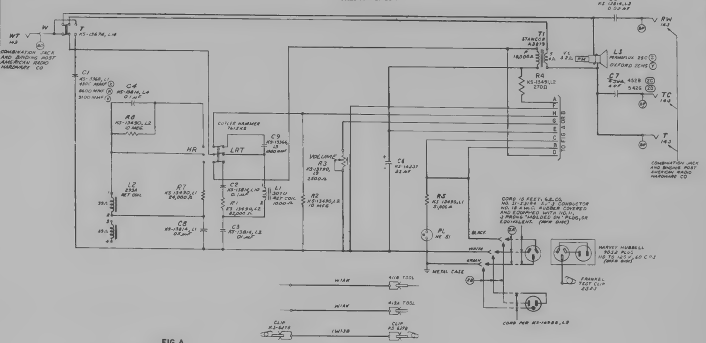


FIG. A
(MFR DISC)

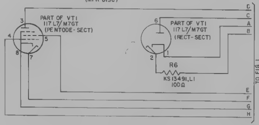
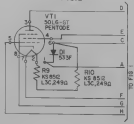


FIG. B



J9473DB-( )
~~ED 92625-01~~
EQUIPMENT INFO

NOTICE- NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT.

ISSUE 5B

1N99

COMMON SYSTEMS
OSCILLATOR CIRCUIT
1A FAULT LOCATOR TEST SET

(J94730-B OSCIL-1A FAULT LOCATOR TEST)

AT&T CO STANDARD

SD-95616-01

BELL TELEPHONE LABORATORIES INCORPORATED 6S